

VI.—*Descriptive List of the Rodents of South Africa.*—By W. L. SCLATER, M.A., *Director of the South African Museum.*

THIS list of the South African Rodents has been drawn up for a book on which I am now engaged, on the South African Mammals, and it seemed worth while publishing it as a preliminary to the greater and more complete work.

The genera are arranged according to the list recently drawn up by Mr. Thomas (*Proc. Zool. Soc.*, 1896, p. 1012), and I have also made use of the new edition of Trouessart's *Catalogue of Mammals*, which has enabled me to trace a good many obscure references.

The synonymy is not complete ; only the more important references are given, and more especially to publications directly bearing on South African forms.

The descriptions and measurements are as far as possible based on specimens preserved in the South African Museum, and where a species is not represented in the collections, on the original description ; the dimensions are in inches and decimals of an inch in all cases.

No complete list of South African Mammals, much less of Rodents, has appeared since 1832 and 1833, when Smuts published his 'Enumeratio Mammalium Capensium,' and Andrew Smith his descriptive catalogue, the latter in the *South African Quarterly Journal* ; a catalogue of this sort, therefore, cannot fail to be useful to naturalists in South Africa, whatever its shortcomings.

For these I must ask the pardon of my fellow-workers ; but few realise the difficulties of working at a distance of 6,000 miles from Europe, with imperfect libraries and not a very abundant material.

All I can do is to hope that this list may be the foundation for a great deal of future work on this subject, which has been so strangely neglected for so many years.

The limits which I have somewhat arbitrarily fixed as the boundaries of South Africa are the Cunene River, dividing German South-West Africa from Angola on the west and the Zambesi River on the east, so that my territory includes the British colonies of the Cape of Good Hope and Natal, the South African Republic and the Orange Free State, Bechuanaland and Rhodesia, German South-West Africa, and that portion of Portuguese East Africa which lies south of the Zambesi.

It is highly probable that a considerable number of new forms remain to be discovered within this region: in the last few years a good many have been described by Mr. Thomas and by Mr. de Winton, especially from Rhodesia. The total number of species mentioned in this paper are 62; of these 44 are represented in the South African Museum; 18 are still wanting. In the following list only one new species is described: *Malacothrix pentonyx*, on p. 202.

## FAMILY SCIURIDAE.

### GEN. XERUS.

*Xerus*, HEMPRICH and EHRENBURG, Symb. Phys., i. (1832).  
Type *X. rutilus*.

Fur harsh, often spiny; external ears short or absent; no cheek pouches; fore limbs with four toes, all clawed, of which the two middle ones are considerably larger than the others, and a rudimentary pollex with a flat nail; hind foot with five toes all clawed, all the claws long and nearly straight; skull large and broad, with very small postorbital processes.

*Dentition*.—i. 1/1 c. 0/0 p.m., 2/1 or 1/1 m. 3/3 = 20 or 22. Molars semi-hypsodont (*i.e.*, with high crowns) and lophodont (*i.e.*, with regular transverse ridges and valleys), not tubercular.

### XERUS CAPENSIS, THE GROUND SQUIRREL.

*Sciurus capensis*, KERR, Linn. Anim. Kingd., p. 266 (1792); A. SMITH, S. Afr. Quart. Journ., ii., p. 127 (1834).

*Sciurus namaquensis*, LICHTENSTEIN, Cat. Rer. Nat., p. 2 (1793).

*Sciurus levaillantii*, KÜHL, Beitr. Zool., p. 67 (1820).

*Sciurus setosus*, SMUTS, Enum. Mamm. Cap., p. 33 (1832).

*Xerus setosus*, LAYARD, Cat. Mamm. S. Afr. Mus., p. 47 (1862).

*Xerus capensis*, JENTINK, Notes Leyd. Mus., iv., p. 48 (1882); NOAK, Zool. Jahrb., iv., p. 131, pl. iii., fig. 10 (skull), (1889) [Kalahari and Damaraland].

*Description*.—General colour above and on the sides pale rufous brown, sparingly speckled with black, the hairs being short, coarse, and close-lying; a narrow white stripe runs from the shoulders to the haunches, below dull white; skin black; head broad; whiskers black; eyes large and prominent with a dull whitish line above and below; ear conch completely absent, the ear being a narrow diagonal slit, half an inch in length; limbs somewhat paler than the body, with four claws on the fore and five on the hind feet, the thumb being shorter and bearing a rudimentary flat nail; the claws are large, nearly straight, and black in colour; tail a little shorter than the head and body, near the root coloured like the body, beyond very bushy and distichous, mixed black and white, the individual hairs being chiefly white with two distinct black bands.

Skull with the bony palate extending a quarter of an inch beyond the level of the posterior molars, nasals broad and zygomatic arches stout.

Incisors white, premolars 1/1 only.

*Dimensions* (from a skin).—Head and body 11·0; tail 9·0, with terminal hairs 10·0; hind foot 2·33; from ear-opening to nose 2·0; skull length about 2·0, breadth about 1·40; upper cheek teeth 49.

*Distribution*.—The central and drier parts of the Colony, extending northwards through the Kalahari and Bechuanaland to Matabeleland and Damaraland; not found far to the eastwards; the South African Museum possesses examples from Namaqualand, Colesberg, and Griqualand West in the Colony.

#### GEN. FUNISCIURUS.

*Funisciurus* (sub-genus), TROUESSART, Le Natur., i., p. 290 (1880). Type *F. lemniscatus*.

*Paraxerus* (sub-genus), FORSYTH MAJOR, Proc. Zool. Soc., p. 189 (1893). Type *F. cepapi*.

Fur soft, never spiny; external ears well developed; no cheek pouches; toes as in *Xerus*, but the claws short and curved; skull much as in *Xerus*, with very small postorbital processes; dentition as in *Xerus*.

Mr. Forsyth Major, in his paper on Squirrels, quoted above, placed the three South African squirrels, together with certain other African

and Asiatic species, in the genus *Xerus*, in consequence of their resemblance to the members of that genus in certain characters of the molars and skull.

If, however, it is necessary to separate these squirrels from the old genus *Sciurus*, it seems better, as proposed by Mr. Thomas, to form a quite new genus for them, as the old genus *Xerus* is a very compact group separated from *Sciurus* by very definite though perhaps somewhat superficial characters.

#### FUNISCIURUS CIPAPI, THE GREY-FOOTED SQUIRREL.

*Sciurus cipapi*, A. SMITH, App. Report Exped. Explor. S. Africa, p. 43 (1836); ID., Illustr. Zool. S. Afr. Mamm., pl. v. (1849); LAYARD, Cat. Mamm. S. Afr. Mus., p. 46 (1862); JENTINK, Notes Leyd. Mus., iv., p. 26 (1882); LORENTZ, Ann. k.k. Hofmus. Wien, ix. notiz., p. 65 (1894) [Limpopo River Banks]; DE WINTON, Ann. Mag. N. H. (6), xix., p. 573 (1897).

*Description*.—General colour speckled yellowish grey and black; fur short, soft, and close, most of the hairs on the back and sides, black at the base and also ringed subterminally with the same colour, below from the chin much paler, nearly white, and hairs not ringed; whiskers black; iris black; ears oval and moderate, measuring about .7 in. in length, covered with sparse hairs; limbs paler than the back with quite short curved claws; tail nearly as long as the head and body, bushy, and very dark, composed of long pale yellow hairs, each with a double ring of black; skull with the palate extending only as far as the level of the posterior molars; upper incisors orange-coloured, ungrooved, premolars 2/1, the anterior upper ones small, molars somewhat resembling those of *Xerus capensis*.

*Dimensions* (from the skin of a female).—Head and body 8.50; tail 6.50 without, 7.75 with terminal hairs; hind foot 1.72; from ear to nose 1.53; skull length about 1.70, breadth 1.0; upper cheek teeth .28.

*Distribution*.—This species was first obtained by Sir Andrew Smith on the banks of the Limpopo River, in what is now the Rustenberg district of the Transvaal; it is also recorded from Damaraland and the Zambesi River; north of this it has been obtained from Nyassaland, but the squirrels from East Africa usually identified with this species have recently been shown by de Winton to be referable to other species.

Type of the species now in the British Museum.



FUNISCIURUS PALLIATUS, THE RED-HEADED SQUIRREL.

*Sciurus palliatus*, PETERS, M. B. Akad. Berlin, p. 273 (1852); *Id.*, Reise Mozamb. Säugeth., p. 134, pl. xxxi., fig. 1, pl. xxxii., fig. 3 (1852); JENTINK, Notes Leyd. Mus., iv., p. 16 (1882).

*Sciurus ornatus*, GRAY, Proc. Zool. Soc., p. 13, pl. i. (1864) [Natal].

*Description*.—General colour above and on the outsides of the limbs speckled yellow and black, the hairs black at the base and subterminally with intermediate reddish-yellow bands and paler yellow tips; head speckled rufous and black; below throughout, including the cheeks, chin, inside and lower halves of the limbs bright rufous, the hairs being the same colour throughout; tail dark rufous with long hairs which are very pale at the base with two black rings following, the terminal half alone being dark rufous; whiskers black; eyes dark brown; ears in the only specimen examined nearly bare of hairs, though said in the original description to be thickly covered.

Incisors smooth and dark orange; premolars 2/1, the anterior upper one small and deciduous.

*Dimensions* (from a skin).—Head and body 8·25; tail without terminal hairs 4·50, with 6·50; hind foot 1·80; from ear to nose 1·75; skull length (about) 1·90, breadth 1·20; upper cheek teeth 40.

*Distribution*.—East and South Africa from Gallaland through German East Africa, Nyassaland and Mozambique to Zululand and perhaps Natal; the South African Museum possesses a skin from the Umgoye Forest in Zululand.

The type described by Peters from Mozambique is now in the Berlin Museum.

FUNISCIURUS CONGICUS, THE WESTERN STRIPED SQUIRREL.

*Sciurus congicus*, KÜHL, Beitr. Zool., p. 66 (1820); JENTINK, Notes Leyd. Mus., iv., p. 33 (1882) (in part); THOMAS, Proc. Zool. Soc., p. 265 (1882) [Cunene River].

*Description*.—General colour above yellowish brown, brighter on the shoulders, below very pale yellow; hairs of the back black at the base and many of them with black tips; along the sides from the shoulder to the hind limbs runs a narrow pale yellow stripe, below which is a similar dark one; an incomplete white ring round the eye; ears moderate, whiskers black; limbs pale, toes covered with long hairs nearly concealing the claws, tail a little shorter than the head and body, bushy, composed of long hairs which are bright yellow with a subterminal pale yellow band.

Anterior upper premolars present; incisors orange-coloured and not grooved.

*Dimensions* (from a skin).—Head and body 7·75; tail without terminal hairs 5·75, with 6·25; hind foot 1·5; from ear-opening to nose 1·4; skull length 1·42, breadth ·90; upper cheek teeth ·30.

*Distribution*.—West and South-West Africa from the Congo through Angola to Ovampoland; there is an example obtained by Mr. Eriksson from Ombanga in Ovampoland in the South African Museum.

## FAMILY GLIRIDÆ.

### GEN. GRAPHIURUS.

*Graphiurus*, F. CUVIER et GEOFFROY, Hist. Nat. Mam., livr. 60 (1829). Type *G. ocularis*.

Tail very bushy and somewhat distichous.

*Dentition*.—i. 1/1, c. 0/0, p.m. 1/1, m. 3/3=20; incisors not grooved; molars rooted, exceedingly small, especially the premolar, which is about half the width of the other teeth; the crowns of the molars are hollowed out, the rims being formed of a ridge of enamel; scarcely any traces of infoldings can be distinguished.

This genus is confined to the Ethiopian region; the smaller species were formerly placed in the genus *Eliomys*, of which the Garden Dormouse of Europe (*E. melanurus*) is the type, but they are now considered to be more appropriately assigned to the present genus originally formed for the reception of the large Grey Dormouse of South Africa.

In addition to the species below described some half-dozen have been recorded from other parts of Africa.

#### GRAPHIURUS OCULARIS, THE LARGE GREY DORMOUSE.

*Sciurus ocularis*, A. SMITH, Zool. Journ., iv., p. 439 (May, 1829).

*Graphiurus capensis*, F. CUVIER et GEOFFROY, Hist. Nat. Mam., livr. 60 (September, 1829); SMUTS, Enum. Mam. Cap., p. 32 (1832); A. SMITH, Illustr. Zool. S. Afr. Mam., pl. xxxix. (1849); LAYARD, Cat. Mam. S. Afr. Mus., p. 49 (1862); REUVENS, Myoxidæ, p. 50, pl. i., fig. 13, pl. iii., fig. 14 (1890); LORENTZ, Ann. k.k. Hofmus. Wien, ix. notiz, p. 65 (1894) [Marico Dist., Z.A.R.].

*Myoxus cattoirii*, FISCHER, Synop. Mamm., p. 310 (1829).

*Graphiurus typicus*, A. SMITH, S. Afr. Quart. Journ., ii., p. 145 (1834).

*Graphiurus elegans*, OGILBY, Proc. Zool. Soc., p. 5 (1838) [Damaraland].

*Graphiurus ocularis*, DE WINTON, Ann. Mag. N. H. (7), ii., p. 3 (1898).

*Description*.—General colour ashy grey, fur soft and thick, dark slaty at the base, dull white mixed with black at the apex; patch on the snout and chin, white with a reddish tinge; cheeks, a patch in front of the shoulder, and a spot on the head at the base of the inner angle of the ear conch, white, a black patch runs from the root of the whiskers through the eye and is continued along the front of the ear; ears large, rounded, nearly naked but thinly covered round the margin with fine black hairs; under surface from the chest downwards and the sides between the limbs dull white, the slaty bases of the fur showing clearly; extremities very slender, tail rather short, bushy throughout and distichous, white mixed with black above, black below, the individual hairs above being black for their basal and white for their terminal halves.

*Dimensions* (from a stuffed specimen).—Head and body 6·30; tail 3·85; with terminal hairs 4·90; from ear-opening to tip of snout 1·14; hind foot ·83; skull length 1·34, breadth ·78; upper cheek teeth ·14.

*Distribution*.—This large dormouse seems to be confined to South Africa, where it is widely distributed in suitable localities; the South African Museum possesses examples from Clanwilliam, Ceres, and Worcester in the west, and from Colesberg, Albany, and Uniondale in the east of the Colony; it is further recorded from Damaraland and the Marico district of the Transvaal.

The type described by Smith from Plettenbergs Bay (Knysna district of the Colony) is now in the British Museum.

#### GRAPHIURUS MURINUS, THE CAPE DORMOUSE.

*Myoxus murinus*, DESMAREST, Mamm. Suppl., p. 542 (1820); SMUTS, Enum. Mamm. Cap., p. 34 (1832); A. SMITH, S. Afr. Quart. Journ., ii., p. 146 (1834); PETERS, Reise Mozamb. Säugeth., p. 136, pl. xxxv., fig. 1 (1852); LAYARD, Cat. Mamm. S. Afr. Mus., p. 48 (1862).

*Myoxus coupei*, F. CUVIER, Hist. Nat. Mamm., livr. xxxvii. (1822) [Senegal].

*Myoxus lalandianus*, SCHINZ, Thierreich, iv., p. 393 (1825).

*Myoxus erythrobronchus*, A. SMITH, Zool. Journ., iv., p. 438 (1829).

*Myoxus cinerascens*, RUPPELL, Mus. Senek., iii., p. 136 (1842) [Natal].

*Graphiurus murinus*, ALSTON, Proc. Zool. Soc., p. 317 (1875) [rufous var.].

*Eliomys murinus*, REUVENS, Myoxidæ, p. 40, pl. i., figs. 4, 6, 7, pl. ii., fig. 9, pl. iii., figs. 5, 6, 7 (1890).

*Eliomys microtis*, NOAK, Zool. Jahrb., ii., p. 248 (1887).

*Description*.—General colour above mouse-grey, the hair very soft and thick, dark slaty at the base with ashy brown tips; below, including the cheeks, chin, and insides of the limbs, dull white, these hairs too being slaty at the base; in some adult specimens the chin, cheeks, and breast have a distinct rusty red tinge; feet very slender, covered with sparse pale hairs and furnished below with the usual pads, five to the fore and six to the hind limbs; from the root of the whiskers to the eyes, and round these, a dark ring, not always well marked, extends; the ears fairly large, rounded, and nearly naked; tail almost as long as the head and body, bushy, covered with long hairs which become much longer towards the apex, but the hairs are fairly evenly distributed, so that the tail can hardly be called distichous, its colour is the same as that of the back, the hairs being unicolorous throughout; four pairs of mammæ, one pair axillary, one pectoral, two inguinal.

Varieties having a general rufous tinge sometimes occur.

*Dimensions* (from a skin).—Head and body 4·1; tail without terminal hairs 2·77, with 3·55; hind foot ·65; from ear-opening to nose ·95; skull length 1·10, breadth ·63; upper cheek teeth ·15.

*Distribution*.—Western and Central Africa from Senegal and Kilimanjaro southwards to Cape Colony; in South Africa the Dormouse is found in the more wooded districts, especially in the east. The South African Museum possesses examples from the Beaufort West, George, Port Elizabeth, and Kimberley districts, from Pondoland, Natal, and Zululand.

The type obtained by Delalande in Cape Colony and described by Desmarest is now in the Paris Museum.

#### GRAPHIURUS PLATYOPS, DARLING'S DORMOUSE.

*Graphiurus platyops*, THOMAS, Ann. Mag. N. H. (6), xix., p. 388 (1897).

*Description*.—In external appearance closely resembling *G. murinus*, but a little larger, and with the tail distinctly white tipped.

Skull very different from *G. murinus*, being broad and flat, with long nasals, narrow interorbital region, and broad and depressed

brain case; the molars are rather smaller than those of the other species.

This form appears to be doubtfully distinct from *G. murinus*.

*Dimensions* (of the type Thomas).—Head and body 4·20; tail 2·75; hind foot ·90; skull length 1·05, breadth ·68; upper cheek teeth ·12.

*Distribution*.—The type and only specimen known was obtained at Enkeldorn, in Mashonaland, by Mr. J. ffolliott-Darling, and is now in the British Museum.

#### GRAPHIURUS NANUS, THE DWARF DORMOUSE.

*Myoxus* (*Eliomys*) *nanus*, DE WINTON, Proc. Zool. Soc., p. 799 (1896).

*Description*.—Smaller than *G. murinus*, general colour rather more ashy, the wood-brown tinge being much less evident, below dull white; a black patch on the face extending from the whisker roots to round the eyes; tail club-shaped, very slender at the base and bushy at the apex, of the same colour as the body above, below somewhat paler; tip of the tail distinctly white.

Skull like that of *G. murinus*, but smaller.

*Dimensions* (of a specimen measured in the flesh by Mr. Marshall, now in the South African Museum).—Head and body 3·30 (of dried skin 3·52); tail without hairs 2·55, with 3·12; hind foot ·60; from ear-opening to tip of nose ·85; skull length ·80, breadth ·51; upper cheek teeth ·12.

*Distribution*.—This species was recently described by Mr. de Winton from a single specimen obtained at Mazoe, in Mashonaland, by Mr. J. ffolliott-Darling, now in the British Museum. The South African Museum has recently received a male and two young ones from Salisbury, presented by Mr. G. A. K. Marshall.

#### GRAPHIURUS KELLENI, THE DAMARALAND DORMOUSE.

*Eliomys kelleni*, REUVENS, Myoxidae, p. 35, pl. i., fig. 1, pl. iii., fig. 3 (1890).

*Description*.—Closely resembling *G. nanus* in size and coloration, but the tips of the hairs on the body above have pale rings with dark brown tips. It is doubtfully distinct from its ally.

*Dimensions* (of the type Reuvsen).—Head and body 2·50; tail with hairs 3·38, without 2·62; hind foot ·62; skull length ·70, breadth ·48; upper cheek teeth ·12.

*Distribution*.—This species is described from a single specimen

preserved in alcohol in the Leyden Museum, obtained in Damaraland by M. Kellen, and is not represented in the South African Museum collections.

## FAMILY MURIDAE.

### SUB-FAMILY GERBILLINAE.

#### GEN. GERBILLUS.

*Gerbillus*, DESMAREST, N. Diet. d'Hist. Nat. (1), xxiv., tabl., p. 22 (1804). Type *G. aegyptius*.

Rat-like animals with somewhat pointed muzzles and moderate-sized ears, sparsely covered with hairs: tail long, hairy, and usually slightly tufted; hind feet elongated, with four rounded tarsal pads; skull with large and swollen bullae; upper incisors grooved (in all South African species); molars at first tubercular, but after wear consisting of a series of transverse or elliptical laminae; the anterior tooth in each jaw consisting of three, the middle of two, the posterior of one only.

This genus is a very large one, and spread over the greater part of the Old World, and has been studied in considerable detail by Lataste; the South African species, however, are in a good deal of confusion, which cannot well be rectified until a re-examination of the old types and a comparison of them with freshly collected material has taken place.

A recent paper by Mr. de Winton has thrown some light on the subject; he recognises four species as existing in South Africa: of these, three are closely allied and difficult to distinguish; the fourth, *G. paeba*, is considerably smaller and of a rather different colour.

#### GERBILLUS PAEBA, THE RED GERBILLE.

*Gerbillus paeba*, A. SMITH, App. Report Exped. Explor. S. Afr., p. 43 (1836); DE WINTON, Ann. Mag. N. H. (7), ii., p. 3 (1898).

*Gerbillus tenuis*, A. SMITH, Illustr. Zool. S. Afr. Mamm., pl. xxxvi., fig. 2 (1849); THOMAS, Proc. Zool. Soc., p. 265 (1882) [Damaraland].

? *Gerbillus tenuis*, var. *schinzi*, NOAK, Zool. Jahrb., iv., p. 134, pl. iii., figs. 13-16 (1889).

? *Meriones (Rhombomys) caffer*, WAGNER, Arch. f. Naturg., i., p. 18 (1842); id., SCHREBER, Säugeth. Suppl., iii., p. 482 (1843).

*Description*.—General colour above pale reddish orange, rather darker along the back owing to brown pencilling; bases of the fur



dull lavender-purple; below and insides of the limbs pure white; ears moderately long and oval; tail slender, cylindrical, and tapering, clothed with short, stiff hairs of the same colour as the back, ending in a thin umber-brown tuft.

Upper incisors pale Dutch-orange with a median longitudinal furrow, lower incisors pale straw-yellow, slender and long (Smith).

*Dimensions*.—Head and body 4·0; tail 4·50; length of upper molars ·2.

*Distribution*.—The types procured by Sir A. Smith were found north of Latakoo, in what is now Bechuanaland, and are in the British Museum. Thomas and Noak have identified Gerbilles from Damaraland and the Kalahari with this species, and de Winton mentions Namaqualand and the Transvaal as localities. There are no examples in the South African Museum.

#### GERBILLUS AFER, THE CAPE GERBILLE.

*Gerbillus afer*, GRAY, Spicileg. Zool., p. 10 (1828); A. SMITH, S. Afr. Quart. Journ., ii., p. 159 (1834); F. CUVIER, Trans. Zool. Soc., ii., p. 143, pl. xxvi., figs. 5, 9 (1836); A. SMITH, Illustr. Zool. S. Afr. Mamm., pl. xxxv. (1849); LAYARD, Cat. Mamm. S. Afr. Mus., p. 51 (1862); DE WINTON, Proc. Zool. Soc., p. 800 (1896) [Rhodesia]; ID., Ann. Mag. N.H. (7), i., p. 4 (1898).

*Meriones schlegelii*, SMUTS, Enum. Mam. Cap., p. 41, pl. i., pl. iii., figs. 1, 5 (1832) [Port Elizabeth].

*Description*.—General colour fawn brown, darker owing to the intermixture of black hairs on the back, lighter on the sides; fur soft and thick, pale slaty at the base, the tips lightish brown; below from the chin backwards pure white, the fur being the same colour throughout; head rather pointed, ears oval and large, sparsely covered with fine brown hairs; front limbs short, brown outside, white inside and on the hands, with four pale yellow or white claws and five prominent carpal pads; hind limbs long, the tarsus and toes especially so, the latter covered with white hairs, the three middle toes much the longest and the first the shortest, all with long, pale claws; there are four tarsal pads, the one at the base of the first digit being smaller than the others; tail about as long as the head and body, fairly thickly covered with stiff hairs, brown above, pale below.

Upper incisors yellow, with a prominent, well-marked groove running along slightly nearer the outer than the inner edge of the tooth; lower incisors the same colour and ungrooved.

*Dimensions* (of a specimen in alcohol).—Head and body 5·0; tail

5.50; from ear-opening to tip of snout 1.45; hind foot 1.50, with middle claw 1.63. An example from Mashonaland measured in the flesh by Mr. Darling is given by de Winton as follows: Head and body 5.93; tail 6.30; hind foot 1.25; skull length 1.45, breadth about .86; length of upper molars .27.

*Varieties and Synonymy.*—The above description is drawn up from examples both stuffed and preserved in alcohol from the immediate neighbourhood of Cape Town.

Another Gerbille from Mazoe, presented by Mr. Darling, apparently identical with specimens from the same place and donor, described by Mr. de Winton (v.s.) differs from these in several particulars, of which the following are the most important:—

The hind foot is shorter, being 1.15 in. in length as against 1.50 in the Cape Colony specimens, the difference is not so much in the tarsus itself as in the length of the three middle toes.

The tail of the Mashonaland example has the scales faintly spotted with brown, there are no traces of these spots in the Colony specimens; further, the tail is much darker above and ends in a slight black tuft, whereas the tail of the Colony species is not darker at the tip.

In the Mazoe animal the claws of both fore and hind limbs are shorter and very dark, almost black in colour, and finally the general colour of the animal is very much darker than in the Cape examples.

Another skin in the South African Museum, in a very bad state of preservation, from Kimberley, is, although of the same size as the typical *G. afer*, of a very different colour it is of a bright reddish orange and accords very well, as far as the colour is concerned, with *G. paebe* but it is much larger than that species as described by Smith.

*Distribution.*—The Cape Gerbille is not uncommon in the neighbourhood of Cape Town and is recorded by Smuts from Port Elizabeth; it is probably found all over the Colony, and, if Mr. de Winton's identification is correct, extends northwards to Mashonaland.

#### GERBILLUS BRANTSII, BRANTS' GERBILLE.

*Gerbillus brantsii*, A. SMITH, Report Exped. Explor. S. Afr., p. 43 (1836); DE WINTON, Ann. Mag. N. H., (7), i., p. 4 (1898).

*Gerbillus montanus*, A. SMITH, Illustr. Zool. S. Afr. Mamm., pl. xxxvi., fig. 1 (1849).

*Meriones (Rhombomys) maccalinus*, SUNDEVALL, Oefvers. Akad. Forh. Stockholm (1846), p. 120 (1847).

*Description*.—General colour above light rufous-brown, freely pencilled with darker brown, paler on the sides, below dull white; head short and somewhat bulky posteriorly; nose-tip black-brown; ears oval, thinly covered with hairs; tarsi ashy brown grey; toes shorter than in *G. afer*; tail reddish brown above, with blackish hairs intermixed, a little shorter than the head and body.

Incisors above Dutch-orange, below white, much larger than in *G. afer*, and distance between them and the molars less (Smith).

*Dimensions*.—Head and body 6·0; tail 5·0 (Smith).

*Distribution*.—Sir A. Smith's specimens were obtained near the sources of the Orange and Caledon Rivers in what is now Basutoland; the type of *M. maccalinus*, was collected by Wahlberg in the Maccali (= Magaliesberg) Mountains in the Rustenberg district of the Transvaal. It is also recorded from the Transvaal by Mr. de Winton. There are no examples in the South African Museum.

#### GERBILLUS LOBENGULAE, LOBENGULA'S GERBILLE.

*Gerbillus leucogaster*, apud DE WINTON, Proc. Zool. Soc., p. 806 (1896) (nec Peters).

*Gerbillus lobengulae*, DE WINTON, Ann. Mag. N. H. (7), i., p. 4 (1898).

*Description*.—General colour above pale fawn, finely grizzled with dull black along the back, pure along the sides; below pure white, the two colours abruptly separated; in other external characters resembling *G. afer*.

Skull with a narrow facial portion across the nasals and maxillæ between the infraorbital foramina.

First upper molar persistently cuspidate, the second lobe being divided into a pair of cusps outer and inner in fairly adult specimens (de Winton).

*Dimensions*.—Head and body 5·30; tail 6·30; hind foot 1·33 (de Winton).

*Distribution*.—This form was obtained by Mr. F. C. Selous, at Essex Vale, near Bulawayo, and was first identified by Mr. de Winton with *G. leucogaster* of Peters, and subsequently considered to be a distinct species; the type and only other known examples are in the British Museum.

#### GEN. PACHYUROMYS.

*Pachyuromys*, LATASTE, Le Naturaliste, i., p. 314 (1880). Type *P. duprasi*.

This genus contains animals allied to the Gerbilles, distinguished by their short tails and their peculiarly shaped skulls in which the tympanic bulla is enormously swollen and enlarged so that it projects back behind the level of the occipital condyles and can be seen at the two posterior angles of the skull when viewed from above. The antorbital plate is not nearly so well developed as in Gerbilles.

The incisors are very slender and pale and marked with an inconspicuous furrow; the molars are much reduced in size as compared with those of *Gerbillus*.

Only two species are recognised in this genus—the South African one, below described, and *P. duprasi*, from North Africa.

PACHYUROMYS AURICULARIS, THE NAMAQUALAND GERBILLE.

*Gerbillus auricularis*, A. SMITH, S. Afr. Quart. Journ., ii., p. 160 (1834); ID., Illustr. Zool. S. Afr. Mamm., pl. xxvi. (1849); DE WINTON, Ann. Mag. N. H. (7), i., p. 5 (1898).

*Gerbillus brevicaudatus*, F. CUVIER, Trans. Zool. Soc., ii., p. 144, pl. xxvi., figs. 10, 13 [Skull] (1836).

*Pachyuromys auricularis*, HUET, Le Naturaliste, i., p. 339 (1881); THOMAS, Proc. Zool. Soc., p. 265 (1882) [Damaraland].

*Description*.—Form short and thick; general colour above tawny brown, mottled and pencilled with dull black, the sides somewhat lighter; fur slaty at the base, ochraceous yellow in the middle, and dark brown at the tips; sides of the muzzle, eyebrows, sides of the head, beneath from the chin backwards, and fore legs pure white; tarsus covered below with white hairs and provided with a single large somewhat complicated pad occupying the space between the toes; toes short, claws small and pale yellow in colour; behind the ear at the base a conspicuous white spot; ears small, oval, and flesh-coloured, a few white hairs on the inner surface; tail short and thick, covered with short, stiff hairs, above brown, beneath reddish white.

Incisors pale yellow, the upper ones grooved rather faintly.

*Dimensions* (from a specimen in alcohol).—Head and body 4·0; tail 3·12; hind foot ·86; from ear to nose-tip 1·12; skull, length 1·27, breadth ·80; upper cheek teeth ·18.

*Distribution*.—The original specimen, described by Smith, came from the Kamiesberg in Namaqualand; it is also recorded from Otjimbique, in Damaraland, and the neighbourhood of Kimberley; the South African Museum has recently received specimens from near Douglas just north of the Orange River in Griqualand West.

SUB-FAMILY OTOMYINAE.

GEN. OTOMYS.

*Otomys*, F. CUVIER, Dents des Mamm., p. 168 (1825). Type *O. irroratus*.

*Euryotis*, BRANTS, Het Geslacht der Muizen, p. 93 (1827). Type *O. irroratus*.

Rat-like animals with short tails, clad with bristles and scales; hind feet short and ears usually large; skull with a moderate bulla and an arched nasal profile, upper incisors grooved, molars composed of a series of laminae of enamel united by cement, posterior molar of upper and anterior molar of lower jaw the largest, the former consisting of from four to nine lamellae.

The genus is a purely African one; in addition to the South African forms below described only one other species, *O. jacksoni*, from British East Africa, is known.

OTOMYS IRRORATUS, THE VLEY OTOMYS.

*Euryotis irrorata*, BRANTS, Het Geslacht der Muizen, p. 94 (1827); A. SMITH, Illustr. Zool. S. Afr. Mamm., pl. xxii. (1849); GRILL, Victorin Zool. Anteck. K. Vet. Akad. Handl. Stockholm, ii., p. 17 (1858); LAYARD, Cat. Mamm. S. Afr. Mus., p. 53 (1862).

*Otomys bisulcatus*, F. CUVIER, Hist. Nat. Mamm., livr. 61 (1829).

*Otomys irroratus*, SMUTS, Enum. Mamm. Cap., p. 45 (1832); DE WINTON, Proc. Zool. Soc., p. 801 (1896) [Mashonaland]; ID., Ann. Mag. N. H. (7), i., p. 5 (1898).

*Euryotis typicus*, A. SMITH, S. Afr. Quart. Journ., ii., p. 149 (1834).

*Euryotis obscura*, LICHTENSTEIN, Verzeichs. Säugeth. u. Vögeln Kaffirland, p. 10 (1842).

*Description*.—General colour above and on the sides dark speckled brown, the bases of the fur rather pale slaty, the tips mingled pale brown and black in varying proportions so that there are darker and lighter individuals, below dirty white, the bases of the fur still slaty, and the tips whitish; ears large, rounded, about  $\frac{3}{4}$  inch in length and breadth, anteriorly fairly well covered with hair; fore limbs short and slender with five carpal pads, and a rudimentary first digit; hind foot short with six tarsal pads, of which the proximal one is somewhat elongated as in the true rats; tail less than half the length of the head and body, covered with short stiff bristles hardly showing any tendency to form a tuft at the tip, black above, dirty-white below. Nasal bones of the skull very much expanded in front.

Incisors much curved, very stout, about .2 in. across the tips, chrome-yellow, each with a deep, well-marked groove running its length about one-third of the breadth of the whole tooth from the outside edge; lower incisors also stout and chrome-yellow, strongly grooved nearer the outer edge than those of the upper jaw; the molars consist of a series of parallel laminae of enamel, the number of which to each tooth can be best expressed in the following formula beginning with the anterior tooth:  $\frac{3-2-6 \text{ to } 9}{4 \text{ to } 6-2-2}$ .

*Dimensions* (of a skin).—Head and body 8.0; tail 3.25; hind foot 1.1; from ear-opening to tip of nose 1.55. Of a specimen measured in the flesh by Darling (*cf.* de Winton); head and body 7.75; tail 4.60; hind foot 1.12; skull, length 1.60, breath .85; upper cheek teeth .40.

*Variation*.—The *Otomys* varies a good deal in colour throughout its range, and Mr. Thomas has shown that the specimens from East Africa (Mianzini) and Nyassaland differ from those of the Cape Colony in possessing an extra lamella to the posterior upper and anterior lower molar, making the numbers 7 and 5, instead of 6 and 4, as in the typical variety; in two skulls from Entafufu, in Pondoland, preserved in the South African Museum the lamella formulae are  $\frac{3-2-7}{4-2-2}$  and  $\frac{3-2-9}{6-2-2}$ . The skins belonging to these two skulls do not seem to differ in any very marked respect from the typical variety, and they were both collected in the same locality about the same time, so that until other evidence is forthcoming we may conclude that variation in the number of molar lamellae is not of specific importance.

*Distribution*.—The Vley *Otomys* is found over a considerable portion of Africa from Somaliland southwards through British East Africa, German East Africa, Nyassaland, and Angola to South Africa.

The first collector of this species was M. Delalande, whose specimens were described by M. Cuvier under the name of the "*Otomie Namaquois*," believing that they came from Namaqualand. The South African Museum possesses examples from the neighbourhood of Cape Town, Bedford, Knysna and Pondoland, and from Potchefstroom in the Transvaal, and it is also recorded from Mashonaland by Mr. de Winton.

#### OTOMYS UNISULCATUS, THE BUSH OTOMYS.

*Otomys unisulcatus*, F. CUVIER, Hist. Nat. Mam., livr. 60 (1829); SMUTS, Enum. Mam. Cap., p. 46 (1832); DE WINTON, Ann. Mag. N. H. (7), i., p. 5 (1898)



*Euryotis unisulcatus*, A. SMITH, S. Afr. Quart. Journ., ii., p. 149 (1834); ID., Illustr. Zool. S. Afr. Mam., pl. xxiii. (1849).

*Euryotis pallida*, WAGNER, Archiv. Naturg., i., p. 134 (1841).

*Otomys rufifrons*, WAGNER, Schreber Säugeth. Suppl., iii., p. 507 (1843).

*Description*.—General colour dark grey-brown, paler on the sides and becoming a dirty white below, rather lighter in colour than *O. bisulcatus*; the fur is soft, dark slate at the base, and pale yellow and black at the tips; ears very large and rounded, measuring about .9 in., thickly covered with hair; limbs and toe-pads much as in *O. bisulcatus*; tail less than half the length of the head and body covered with short bristles, dark above, light below.

Skull with the superior and anterior edges of the perpendicular plate of the antorbital foramina forming almost a right angle.

Upper incisors narrower than in the last species (about .15 in. broad at their tips), paler, and with the groove much nearer the outer edge; lower incisors ungrooved; formula of the molar laminae  $\frac{3-2-1}{4-2-2}$

*Dimensions* (from a stuffed specimen).—Head and body 8.25; tail 3.50; hind foot 1.08; from ear-opening to tip of snout 1.55; skull length 1.40, breadth .70; upper cheek teeth .34.

*Distribution*.—To M. Delalande's collecting and M. Cuvier's description we are also indebted for our first knowledge of this species, and except for Sir A. Smith the animal seems to have attracted little attention since; the South African Museum possesses examples from Garies in Namaqualand, Clanwilliam and Malmesbury, and from Touws River in the Worcester division, and Sir A. Smith records his specimens from George.

#### OTOMYS BRANTSII, BRANTS' OTOMYS.

*Euryotis brantsii*, A. SMITH, S. Afr. Quart. Journ., ii., p. 150 (1834); ID., Illustr. Zool. S. Afr. Mam., pl. xxiv. (1849).

*Otomys brantsii*, DE WINTON, Ann. Mag. N. H. (7), i., p. 6 (1898).

*Description*.—General colour yellowish brown, lighter on the sides and below; as in the other species the fur is slaty at the base, with yellowish brown intermingled with less abundant black tips; ears markedly smaller than in the other two species, about half an inch in length and breadth, fairly thickly clothed with hairs; limbs somewhat stouter and broader than those of *O. unisulcatus*; tail thickly clothed with somewhat stout yellow bristles with a dark dorsal band more marked towards the tip, which is almost black; two pairs of mammae inguinal in position; tarsal pads six, all circular.

Nasal bones not expanded, normal; upper incisors moderate, the groove well to the outer side of the tooth, the outer edge pale, almost white; lower incisors sometimes faintly grooved, generally smooth; formula of molar laminae:  $\frac{3-2-1}{4-2-2}$ .

*Dimensions* (from an example in spirit).—Head and body 5·60 (of a skin 7·0); tail 3·40; hind foot 1·15; from ear-opening to tip of nose 1·60; skull length 1·50, breadth ·75; cheek teeth ·30.

*Distribution*.—Namaqualand, Sir Andrew Smith's specimen came from the neighbourhood of the Orange River; there are a considerable number of examples in the South African Museum obtained by Mr. Péringuey at Klipfontein, near O'okiep in Namaqualand.

## SUB-FAMILY DENDROMYINAE.

### GEN. DENDROMYS.

*Dendromus*, A. SMITH, Zool. Journ., iv., p. 438 (1829). Type *D. mesomelas*.

Small, slender, mouse-like animals with long, scaly, and sparsely-haired tails, rather large ears, and with slender limbs with the three middle digits of each elongated. Skull with the infraorbital opening triangular, hardly at all narrowed below.

Upper incisors grooved, molars small, the anterior upper one as long as the second and third taken together; the tubercles fairly distinctly arranged in pairs.

#### DENDROMYS MESOMELAS, THE CHESTNUT TREE MOUSE.

*Mus mesomelas*, BRANTS, Muizen, p. 122 (1827).

*Dendromus typus*, A. SMITH, Zool. Journ., iv., p. 439 (1829).

*Dendromys mesomelas*, SMUTS, Enum. Mam. Cap., p. 40 (1832).

*Dendromys typicus*, A. SMITH, S. Afr. Quart. Journ., ii., p. 158 (1834); *Id.*, Illustr. Zool. S. Afr. Mam., pl. xxxiv., fig. 1, pl. xxi., fig. 2 [skull and teeth] (1849).

*Description*.—General colour chestnut-brown above, paler on the sides, white with a rufous tinge below; fur soft and thick, dark slaty for the basal three-quarters, tips chestnut-brown; head and snout acutely pointed; ears large, thinly covered with hairs, which are thicker along the margin, so as to there give it a darker appearance; fore limbs short and slender, formed for grasping, the three middle fingers elongated and the fifth much shorter, all clawed except the first;

hind limbs elongated and slender, toes long, all clawed except the first, which has a flat nail; tail as long or longer than the head and body, slender, with rings formed of a series of scales, which are somewhat concealed by the numerous bristles, dark above, lighter below. A black dorsal stripe from behind the head to the root of the tail is sometimes present, but is not noticeable in the specimens on which the above descriptions are founded.

*Dimensions* (from a stuffed specimen).—Head and body 3·80; tail (somewhat contracted), 3·80; hind foot ·75; from ear-opening to tip of nose ·90.

*Distribution*.—East and South Africa, from Gallaland through Nyassaland to Cape Colony; the type is said to have come from the Sondags River in Uitenhage; the South African Museum possesses examples from the immediate neighbourhood of Cape Town.

#### DENDROMYS PUMILIO, THE SMALL TREE MOUSE.

*Dendromys pumilio*, WAGNER, Munch. Gelehrt. Anzeiger, xii., p. 437 (1841); MATCHIE, Säugeth. Deutsch Ost Afrika, p. 49 (1895).

*Description*.—Smaller than *D. mesomelas*, and without the black dorsal stripe; reddish brown above, cheeks, lower side and feet white; tail longer than the head and body (Matchie); is very doubtfully distinct from *D. mesomelas*.

*Dimensions*.—Head and body 2·38; tail 3·12 to 3·75.

*Distribution*.—East and South Africa; this tree mouse is recorded from various parts of German East Africa, and was originally described from Cape Colony. Unrepresented in the South African Museum collections.

#### DENDROMYS MELANOTIS, THE GREY TREE MOUSE.

*Dendromys melanotis*, A. SMITH, S. Afr. Quart. Journ., ii., p. 158 (1834); ID., Illustr. S. Afr. Zool. Mam., pl. xlix., fig. 2, (1849); FISK, Proc. Zool. Soc., p. 340 (1887) [habits].

*Description*.—General colour above ashy grey with a slight tinge of rufous, below dull white; a well-marked black line from between the shoulders to the root of the tail; fur soft and thick, slaty at the base as in the other species; ears broad and patulous, larger than in *D. mesomelas*, the tips dark, covered with sparse silvery white hairs, a white spot on the side of the head at the base of the outer margin of the conch; fore limbs slender, only the three middle toes clawed, the first and fifth mere rudiments; hind feet long and slender,

especially the toes, of which only the three middle ones bear claws, the fifth bears a flat nail, the first is represented only by a tubercle; the soles of the carpus and tarsus are without well-defined pads, but covered with a series of closely set hemispherical swellings; tail longer than the head and body, covered with rings from which spring short bristles, dark above, light below; eight mammae, one pair axillary, one pair pectoral, and two pairs inguinal.

*Dimensions* (from a stuffed specimen).—Head and body 2·80; tail 3·0; hind foot ·60; from ear-opening to tip of nose ·65; skull, length ·80, breadth ·40; upper cheek teeth ·15.

*Distribution*.—Sir A. Smith's type came from Durban; the South African Museum possesses examples from the suburbs of Cape Town; no other locality seems to be recorded, unless certain examples mentioned by M. Bocage from Angola are referable to this species.

#### GEN. STEATOMYS.

*Steatomys*, PETERS, Bericht Akad. Berlin, p. 258 (1846). Type *S. pratensis*.

Small, short-tailed, mouse-like animals, always very plump owing to the storage of fat all over the body, with no cheek pouches, moderate ears, and short limbs.

Skull with the infraorbital opening not narrowed below.

Upper incisors grooved; molars tuberculated, the tubercles arranged in two rows, except in the case of the anterior upper molar, whose median row consists of three, so that this tooth has seven tubercles instead of eight, as in *Mus*.

This genus is also purely Ethiopian. Three other species have been recently described from West and East Africa.

#### STEATOMYS PRATENSIS, THE FAT MOUSE.

*Steatomys pratensis*, PETERS, Bericht Akad. Berlin, p. 258 (1846); THOMAS, Ann. Mag. N. H. (6), x., p. 265 (1892); DE WINTON, Proc. Zool. Soc., p. 805 (1896) [Mashonaland].

*Steatomys edulis*, PETERS, Reise Mozamb. Säugeth, p. 163, pl. xxxiv., fig. 2, pl. xxxv., fig. 11 (1852).

*Steatomys krebsii*, PETERS, *ibid.*, p. 165, pl. xxxvi., fig. 3 (1852) [Kaffraria].

*Description*.—Form stout and plump; general colour dark rufous above, lighter on the sides, white below; fur very short and soft; snout short and pointed; ears moderate, fairly well clothed with

hairs; limbs white, fore feet with four claws and a flat nail to the first finger; hind foot with five claws, shorter than those of the fore limb; tail short, hardly half the length of the body, brown above, white below (Peters).

*Dimensions* (from Peters' description).—Head and body 3·25; tail 1·75; hind foot ·60; skull length ·79, breadth ·47; upper cheek teeth ·13. From a specimen from Mashonaland, measured in the flesh by Mr. Darling; head and body 3·77; tail 1·77; hind foot ·66.

*Distribution*.—South-East Africa: Mozambique (whence came the type), Mashonaland, Nyassaland, and “the interior of Kaffraria” (probably meaning the Transvaal), whence came the type of *S. krebsi*; the species is not represented in the South African Museum.

#### GEN. MALACOTHRIX.

*Otomys*, A. SMITH, S. Afr. Quart. Journ., ii., p. 147 (1834) (nec Cuvier). Type *M. typicus*.

*Malacothrix*, WAGNER, Schreb. Säugeth. Suppl., iii., p. 496 (1843). Type *M. typicus*.

Small, short-tailed, mouse-like animals with stout bodies, slender limbs, and well-developed ears; the tarsus and carpus are hairy to the toe pads; the skull is slender, the antorbital foramen is hardly at all narrowed below, and the perpendicular plate is not well developed.

The upper incisors are very strongly grooved towards their outer edge, the lower ones ungrooved and rather paler; the molars resemble those of *Steatomys*, the anterior upper one with 7 cusps, 2 in the anterior and posterior row, and 3 in the median row, the middle molar has 5, the front row 3, of which the innermost is small and not well developed, the back row 2, the posterior molar has 2 small cusps only, side by side; in the lower molars the cusps are arranged in pairs.

This genus seems to come close to *Steatomys*, being distinguishable only by its very hairy tarsus.

Only the two species below described are included in it, as *Otomys albicaudatus* of Smith must apparently be assigned to the Sygmodont genus *Mystromys*.

#### MALACOTHRIX TYPICUS, THE MOUSE GERBILLE.

*Otomys typicus*, A. SMITH, S. Afr. Quart. Journ., ii., p. 148 (1834); LAYARD, Cat. Mam. S. Afr. Mus., p. 54 (1862).

*Malacothrix typicus*, WAGNER, Schreb. Säugeth., Suppl. iii., p. 498 (1843); DE WINTON, Ann. Mag. N. H. (7), i., p. 8 (1898).

*Description*.—General colour pale brown above, the fur long, soft, and with dark slaty bases, below white also with slaty bases; head somewhat pointed, ears very large for the size of the animal, measuring about .7 in. by .55 in., dark coloured, sparsely covered with fine black and white hairs intermixed; limbs slender, covered with dull white hairs; on the fore foot four toes clawed, the third and fourth only slightly exceeding the second and fifth in length; hind foot with four toes only, the first or inner one being absent, all clawed, the fifth slightly shorter than the others; whole under surface of the carpus and tarsus right up to the toe pads covered with short, white, coarse hairs; tail short, dark, and scaly, covered with short, white, bristly hairs, and so appearing a dirty white.

Skull slender and much narrowed between the orbits, incisors orange, and the upper ones deeply grooved.

*Dimensions* (from a stuffed specimen).—Head and body 3.5; tail 1.40; hind foot .70; from ear-opening to tip of snout 1.0; skull length .90, breadth .55; length of cheek teeth .19.

*Distribution*.—Apparently confined to Cape Colony; the species was described by Sir A. Smith many years ago from specimens obtained near Graaf Reinet; the above description is drawn up from specimens in the South African Museum from Beaufort West and Griqualand West.

#### MALACOTHRIX PENTONYX, sp. nov., THE SMALL-EARED MOUSE GERBILLE.

*Description*.—General colour above brown with a rufous tinge, below including the upper lips and limbs pure white, the line of demarcation being very marked; fur soft and thick, above with, below without, slaty bases; head acutely pointed, ears moderate, markedly smaller than those of *M. typicus*, oval, about .45 by .30, covered internally with sparse whitish, externally with brown hairs.

Limbs slender, proportioned much as in *M. typicus*, the forelimbs with four clawed toes; hind limbs with five toes, all with well-marked claws, of which the inner (*i.e.*, the first) is the shortest, and the fifth slightly shorter than the other three; tarsus hairy as in the other species.

Tail short, a little darker above than below, covered with short, stiff, bristle hairs.



Skull with the interorbital region somewhat wider than in *M. typicus*; teeth as in the other species.\*

*Distribution*.—Western part of the Colony; the types were obtained on the Cape Flats near Cape Town, by Messrs. E. L. Layard and M. Bishop.

## SUB-FAMILY MURINAE.

### GEN. MUS.

*Mus*, LINNAEUS, Syst. Nat., 12th ed., i., p. 79 (1766).

Animals with bodies covered with soft, sometimes spiny, fur, with pointed muzzles, no cheek pouches and prominent eyes; the ears are nearly naked, the tail more than half the length of the body, covered with scales arranged in rings, with usually a sparse covering of short bristles; pollex rudimentary with a flat nail, all the other digits with claws; palms with five, soles with six rounded or oval pads.

Skull with the antorbital foramen usually forming a narrow slit below, and the perpendicular plate which forms its outer wall well developed; palate compressed and the incisive foramina long.

Dentition the same as in all *Muridae*, i.e., i. 1/1, c. 0/0, p.m. 0/0, m. 3/3 = 16. Incisors not grooved, usually rather narrow; molars when unworn with a triple longitudinal row of tubercles, lower jaw with a double row, when worn crossed by curved transverse bands of enamel, marking the position of the tubercles.

This genus is the largest of the whole Mammalian class, containing, according to Trouessart's list, 176 species, and doubtless many still remain to be described.

They range all over the Old World, with the exception of Madagascar, but are not found in the New except where introduced by human agency.

The study of the South African species has been much neglected since the time of Sir A. Smith, and it is very difficult to identify some of his species owing to the fact that his descriptions are often short and vague, and also that the types of those still in the British Museum are all in a very bad state of preservation.

### MUS DECUMANUS, THE NORWAY OR BROWN RAT.

*Mus decumanus*, PALLAS, nov. sp. Glir., p. 91 (1778); SMUTS, Enum. Mamm. Cap., p. 35 (1832); LAYARD, Cat. Mamm. S. Afr. Mus., p. 51 (1862).

\* For dimensions see p. 239.

*Description*.—General colour above greyish brown, sometimes with a reddish-brown tinge; fur woolly, intermixed with longer, coarser, straight hairs, the woolly portion slaty, with pale brown tips, the coarse hairs black; below dirty white with slaty bases to fur; ears small, when pressed forward not reaching the eyes; limbs and feet stout and strong; the tarsal pads well developed, six in number, the proximal one being an elongated oval; tail always shorter than the head and body, covered with short sparse bristles, not concealing the scaly rings, which are coarse, numbering about 25 to the inch, the bristles become a little longer towards the tail-tip, and form a slight tuft in some cases; mammae 5 to 6 pairs.

Skull large, with well-developed supraorbital ridges; the antorbital foramen is narrowed below, and the anterior edge of the plate is perpendicular.

This rat can always be distinguished by its size, the shortness of its ears and tail, and by its coarse fur.

*Dimensions* (from a large stuffed male).—Head and body 11·25; tail 7·75; hind foot 1·60; from ear-opening to nose-tip 2·20; skull length 1·50, breadth ·70; length of upper molars ·30.

*Distribution*.—This rat is cosmopolitan, being found all over the world, especially in the neighbourhood of towns and seaports; its original home appears to have been in Western China, whence it spread to Europe early in the last century—it is said to have reached England about 1730. It is common in Cape Town and neighbourhood, and is probably to be found in all the large towns, and along the lines of communication.

#### MUS RATTUS, THE BLACK RAT.

*Mus rattus*, LINNAEUS, Syst. Nat., 12th ed., i., p. 83 (1766); LAYARD, Cat. Mam. S. Afr. Mus., p. 51 (1862); DE WINTON, Proc. Zool. Soc., pp. 803, 807 (1896) [Rhodesia].

*Description*.—General colour above and below brown, fur coarse and harsh, ears larger than in *M. decumanus*, when pressed forward reaching as far as the eye; feet and hands a little paler than the back but not white, the pads on the soles well developed; the proximal one elongated and oval; tail much longer than the head and body, of the same brown colour throughout, covered with short bristles not becoming much longer towards the tip; tail rings somewhat finer than those of *M. decumanus*, about 30 to the inch; extreme tail-tip in South African specimens examined, white;

mammæ 10 to 12 in number, 2 or 3 pairs pectoral, 3 pairs inguinal.

Skull generally resembling that of *M. decumanus*, but rather shorter in the nasal region.

*Dimensions* (measured in the flesh).—Head and body 7·40; tail 8·63; hind foot 1·32; skull length 1·40, breadth ·75; upper molars ·30.

*Distribution*.—Like the brown rat, the black rat is cosmopolitan, having been carried all over the world in ships; it has, however, been driven out of many places by its brown cousin, and is now comparatively rare in England.

In Africa the black rat was formerly common in Cape Town, but it now seems to have disappeared; it is, however, the common house rat of Rhodesia, and I have examined a specimen from Pretoria preserved in the Museum there.

This rat is not indigenous in Europe, though long established there, it has been known to exist on the Continent since the thirteenth century; brown and rufous varieties differing somewhat in colour from the ordinary European form are found in North Africa, India, and Burma, and are there indigenous; it is probably from this form that the present European race originated.

#### MUS CHRYSOPHILUS, DARLING'S RAT.

*Mus chrysophilus*, DE WINTON, Proc. Zool. Soc., pp. 801, 807 (1896).

*Description*.—General colour bright reddish fawn, sprinkled with black hairs becoming lighter on the sides; below white, clearly defined from the fawn of the sides, all the fur above and below with slaty bases; ears oval, about three-quarters of an inch in length, with a thin covering of greyish hairs; feet covered with white hairs, soles somewhat dark in colour, with the usual six pads, the proximal one rounded; tail a little longer than the head and body, the rings running about 30 to an inch, towards its base lighter below than above, distally quite brown, bristles increasing in number towards the tail-tip, but hardly forming a brush.

Skull with the outer edge of the antorbital plate sloping forwards.

A rat in the collection of the Pretoria Museum closely resembles the description of this species, differing only in its greater size (head and body 6·50; tail 8·0; hind foot 1·40), and in the absence of the slaty bases in the fur of the under side.

*Dimensions* (of the type measured in the flesh).—Head and body 5·75; tail 6·50; hind foot 1·12. Of a specimen in alcohol: Head and body 5·10; tail 6·0; hind foot 1·2; skull length 1·50, breadth ·75; molar teeth of upper jaw ·25.

*Distribution*.—The type of this species, collected by J. ff. Darling at Mazoe, in Mashonaland, is in the British Museum, the South African Museum possesses an example from the same locality and collector; it has also been found near Bulawayo, in the Transvaal, and in Nyassaland.

#### MUS AURICOMIS, THE GOLDEN RAT.

*Mus auricomis*, DE WINTON, Proc. Zool. Soc., pp. 802, 807 (1896).

*Description*.—General colour above fawn-yellow, sprinkled with black hairs, lighter on the sides; below including the hands and feet pure white almost to the bases of the hairs, which are sometimes a pale grey; ears moderate, naked, save for a few yellow hairs; tail nearly naked, bi-coloured for the basal portion, brown for the terminal portion with a few short adpressed bristles increasing in number and length towards the tip, rings of the tail about 27 to the inch.

Allied to *M. chrysophilus*, but smaller with almost pure white belly fur and a more golden and less rufous tinge to the sides and upper parts.

*Dimensions* (of the type measured in the flesh).—Head and body 4·44; tail 5·78; hind foot ·94; skull length 1·22, breadth ·59; upper molars ·20.

*Distribution*.—The type of this species was also obtained at Mazoe in Mashonaland by Mr. Darling, and is now in the British Museum. Mr. de Winton records it at the same time from the neighbourhood of Bulawayo, where it was obtained by Mr. Selous. A skin in the South African Museum from Paarl, in the Colony, has been identified by Mr. de Winton with this species.

#### MUS PAEDULCUS, WAHLBERG'S RAT.

*Mus paedulus*, SUNDEVALL, Oefvers. Akad. Forh., Stockholm (1846), p. 120 (1847).

*Description*.—General colour above greyish brown, darker in the middle of the back, greyer on the sides, below pure white with no slaty bases of the fur; along the back the hairs are fairly soft and thick and have a considerable admixture of black tips; ears rather

large, oval with a thin covering of grey hairs; extremities greyish white, claws almost concealed by the long hairs; the proximal tarsal pad much elongated; tail slightly shorter than the head and body, dark brown above and below, rings very fine, about 50 to the inch, bristles short, tail-tip in the two specimens examined white; mammae probably 3 pairs, *i.e.*, 1-2=6.

Skull with the incisive foramina barely reaching the anterior level of the molars; the front edge of the perpendicular plate of the antorbital foramen with a backwardly directed slope, so that its top angle is somewhat acute.

The above account is drawn up from a specimen in the South African Museum agreeing very well with the original description of Sundevall.

*Dimensions* (from a skin).—Head and body 5·5; tail 5·0; hind foot ·90; from ear-opening to nose-tip 1·10; skull too imperfect for measurement.

*Distribution*.—The type collected by Wahlberg, now in the Stockholm Museum, is described as coming from the interior of Kaffirland; the example in the South African Museum is from Pondoland in the extreme east of the Colony; no other localities are recorded.

#### MUS DOLICHURUS, THE LONG-TAILED RAT.

*Mus dolichurus*, SMUTS, Enum. Mam. Cap., p. 38, pl. ii. (1832); A. SMITH, S. Afr. Quart. Journ., ii., p. 155 (1834); THOMAS, Proc. Zool. Soc., p. 186 (1891); *Id.*, *ibid.*, p. 141 (1894) [measurements].

*Mus arborarius*, PETERS, Reise Mozamb. Säugeth., p. 152, pl. xxxv., fig. 7, pl. xxxvi., fig. 2 (1852).

*Mus rutilans*, PETERS, M. B. Akad. Berlin, p. 478, pl. ii., figs. 2, 3 (1876).

*Description*.—General colour above rich brown, rather darker along the middle of the back owing to the greater admixture of black-tipped hairs, becoming paler on the sides and pure white below, without slaty bases, fur of the upper surface very long and soft; tip of the nose not white, a dark spot in front of the eye; ears rather large, about half an inch in length; hands and feet somewhat slender, both covered with white hairs; proximal tarsal pad elongated; tail much longer than the head and body, bi-coloured chiefly owing to the bristles being black above and white below, rings fine though conspicuous, about 46 to the inch, bristles towards the tip of the tail

elongated and soft, forming a distinct brush; mammae 6 in number—1 pair pectoral, 2 pairs inguinal.

The very long tail with black pencil and fine rings distinguish this species from other South African rats.

*Dimensions* (from a skin).—Head and body 4·0; tail 5·25; hind foot ·87; skull length 1·1, breadth ·56; length of upper molars ·20.

*Distribution*.—The type described by Smuts was from the neighbourhood of Cape Town, whence the South African Museum has an example, Smith records it from Uitenhage. Outside South Africa it appears to be widely distributed from the Niger and Cameroons in the west and the Fayoum of Egypt in the east southwards through Central and East Africa to the Colony.

#### MUS NIGRICAUDA, THE BLACK-TAILED RAT.

*Mus nigricauda*, THOMAS, Proc. Zool. Soc., p. 266, pl. xiv., fig. 1 (1882); BOCAGE, Journ. Sci., Lisbon (2), v., p. 10 (1890).

*Description*.—General colour above yellow mixed with black, somewhat more yellow on the sides, fur coarse and long, below pure white without slaty bases to the hairs; ears large, thinly covered with short greyish hairs; extremities white, the hairs concealing the claws; hind feet comparatively short, the six pads large and rounded, occupying a considerable portion of the sole; tail shorter than the head and body, nearly naked at the base, but thickly covered distally above and below with long shining black hairs forming a slight pencil at the tip; molars broad and rounded with numerous well-marked small cusps.

*Dimensions* (from the type).—Head and body 6·2; tail 5·8; hind foot 1·01; upper molars ·21.

*Distribution*.—The type was obtained by C. J. Andersson on the Houttop River in Damaraland; other examples have been collected in Angola, where it appears to be fairly common. There are no specimens in the South African Museum.

#### MUS DAMARENSIS, THE DAMARALAND RAT.

*Mus silaceus*, apud THOMAS, Proc. Zool. Soc., p. 266 (1882) (nec Wagner).

*Mus damarensis*, DE WINTON, Ann. Mag. N. H. (6), xix., p. 349 (1897).



*Description*.—General colour reddish fawn or isabelline sprinkled with fine darker hairs, richest along the dorsal line, becoming greyer on the sides and below pure white, including the hands and feet; ears large, covered in and outside with short reddish hairs; tail about the same length as the head and body, covered distally with somewhat long liver-coloured hairs so as to be almost bushy, rings fine, about 50 to the inch; the feet are thick, the pads are large and crowded, the claws small and curved, are almost concealed by the hairs.

*Dimensions* (from the type).—Head and body 5·30; tail 5·30; hind foot ·95; skull length about 1·25, breadth ·62; upper molars ·24.

*Distribution*.—The type, obtained some years ago by Mr. C. J. Andersson in Damaraland, was formerly identified with *M. silaceus*, but has recently been shown to be distinct by de Winton.

#### MUS COUCHA, THE WHITE-NOSED MOUSE.

*Mus coucha*, A. SMITH, App. Report Exped. Explor. S. Africa, p. 43 (1836); THOMAS, Proc. Zool. Soc., p. 266 (1882); JENTINK, Notes Leyd. Mus., p. 174 (1887).

*Mus silaceus*, WAGNER, Arch. Naturgesch., i., p. 11 (1842).

*Mus microdon*, PETERS, Reise Mozamb. Säugeth., p. 149, pl. xxxv., figs. 5, 6, pl. xxxvi., fig. 1 (1852).

*Mus sp.*, THOMAS, Proc. Zool. Soc., p. 13 (1888); POUSARGUES, Ann. Sci. Nat. (8), iv., p. 14 (1897).

*Description*.—General colour dark brown on the back, growing paler on the sides and dirty white below, all the fur above and below with strong slaty bases, the fur of the back long, soft with pale brown and black tips intermixed, the latter much more abundant along the middle of the back; tip of the nose white; ears moderate and oval; feet pure white, tarsal pads all rounded, claws almost concealed by the long white hairs which project beyond them; tail about the same length or shorter than the head and body, the rings numbering about 44 to the inch, covered with short bristles, dark above, white below, hardly longer towards the tip; mammae 16—5 pairs pectoral, 3 pairs inguinal in the specimen examined, but often exceeding this number up to 24.

Skull with a large antorbital foramen not much narrowed below with small not well-developed plate.

*Synonymy*.—This rat is found over the greater part of Africa, and it is in consequence of this and of the fact that it varies to a great extent throughout its range both in size and colour that it has received the names recorded above in the synonymy; it seems probable, however, as M. Pousargues and Mr. Thomas have stated above, that there is only one varying species.

*Dimensions* (from a specimen in alcohol).—Head and body, 3·60 (of a dried skin 5·0); tail 3·50; hind foot ·85; from ear to tip of nose 1·20.

*Distribution*.—The type of the species was obtained by Sir A. Smith in Bechuanaland, and the species is also known from Damara-land, while the South African Museum contains examples from the neighbourhood of Cape Town, Namaqualand and Griqualand West; outside South Africa it is recorded from French Congoland and Abyssinia through Central and East Africa and Nyassaland to Mozambique.

#### MUS COLONUS, BRANTS' RAT.

*Mus colonus*, BRANTS, Muizen, p. 124 (1827); SMUTS, Enum. Mamm. Cap., p. 37 (1832); A. SMITH, S. Afr. Quart. Journ., ii, p. 154 (1834); ID., Illustr. Zool. S. Afr. Mam., pl. xlvii., fig. 3 (1849); PETERS, Reise Mozamb. Säugeth., p. 151 (1852); GRILL et SUNDEVALL, Victorin Zool. Anteck. k. Vet. Akad. Handl. Stockholm, ii., p. 18 (1858); THOMAS, Ann. Mag. N. H. (6), x., p. 181 (1892).

*Mus natalensis*, A. SMITH, S. Afr. Quart. Journ., ii., p. 156 (1834); ID., Illustr. Zool. S. Afr. Mam., pl. xlvii., fig. 2 (1849); MATCHIE, Säugeth. Deutsch Ost Afrika, p. 51 (1895); DE WINTON, Proc. Zool. Soc., p. 807 (1896).

*Mus mariquensis*, A. SMITH, App. Report Exped. Explor. S. Africa, p. 43 (1836); DE WINTON, Proc. Zool. Soc., p. 803 (1896).

*Description*.—General colour very dark brown, almost black along the middle line of the back owing to the admixture of long black hairs, rather paler and more rufous on the sides, below dirty white with dark slaty bases to the fur; nose-tip white, ears oval, covered with a few sparse brown hairs, feet rather slender, dirty white, tail shorter than head and body, brown above, paler below owing to the colour of the short, stiff bristles with which it is thinly clothed, rings coarse and conspicuous, about 40 to the inch; mammae according to Thomas 10 in number—3 pairs pectoral and 2 pairs inguinal.

*Dimensions* (from a skin).—Head and body 5·50; tail 4·80; hind foot ·92.

*Distribution*.—The type is said by Brants to have come from the neighbourhood of Algoa Bay; Victorin obtained his specimens at Rondebosch near Cape Town, and the South African Museum possesses examples from Pondoland and Rustenberg in the Transvaal.

#### MUS VERROXI, VERREAUX'S RAT.

*Mus verroxi*, A. SMITH, S. Afr. Quart. Journ., ii., p. 156 (1834).

*Description*.—General colour dark speckly brown, a little paler on the sides and bluish white below, with slaty bases to the fur throughout, no marked line of distinction of colour between the sides and lower surface; tip of the nose not white; ears long and rounded very nearly naked; extremities dirty white, tarsal pads moderate, six in number, the two proximal ones somewhat oval; tail considerably longer than the head and body, distinctly bi-coloured, the rings fine and not easily distinguishable, about 50 to the inch, tail-tip black and slightly tufted; mammae, in the only specimen in which they could be made out, 10 in number—3 pairs pectoral and 2 pairs inguinal.

The above description, taken from a specimen in the South African Museum, agrees well with *M. verroxi*, as described by Smith, except that the nose-tip is not white as asserted by Smith.

*Dimensions* (from a skin).—Head and body 5·25; tail 6·0; hind foot ·90.

*Distribution*.—The type is described as being from the neighbourhood of Cape Town; the specimens in the South African Museum are from Rondebosch in the Cape Division.

#### MUS MUSCULUS, THE HOUSE MOUSE.

*Mus musculus*, LINNAEUS, Syst. Nat., 12th ed., i., p. 83 (1766); A. SMITH, S. Afr. Quart. Journ., ii., p. 154 (1834); LAYARD, Cat. Mam. S. Afr. Mus., p. 50 (1862).

*Mus orientalis*, CRETZSCHMAR, Atlas zu der Reise von Rüppell, Säugethiere, p. 76, pl. xxx. (1826); GRILL ET SUNDEVALL, Victorin Zool., Anteck. k. Vet. Akad. Handl. Stockholm, ii., p. 18 (1858).

*Mus modestus*, WAGNER, Arch. Naturges., i., p. 14 (1842); ID., Schreb. Säugeth. Suppl., iii., p. 432, pl. 181 e (1843).

*Description*.—General colour above brown with a yellowish tinge, darkest along the back, lighter on the sides; below greyish, the fur slaty with somewhat paler tips, never white; ears large and nearly naked, when pressed forwards reaching the eye; hands and feet grey, never white, slender with the usual number of pads which are all circular; tail usually about the same length as the head and body, dark coloured, thinly covered with the usual bristles not increasing in length towards the tip, towards the base somewhat lighter below than above but towards the tip dark all round, rings of the tail slender, about 50 to the inch; mammae 10 in number—3 pairs pectoral, 2 pairs inguinal.

*Dimensions* (from a specimen in alcohol).—Head and body 3·20 (skin 3·70); tail 3·45; hind foot ·62; from ear to nose-tip ·90; skull length ·80, breadth ·45; upper molars ·15.

*Distribution*.—Cosmopolitan, being found in the habitations of civilised man throughout the world; it probably originated in the East; it is common in Cape Town houses and also in Port Nolloth and Pretoria and probably all other towns of South Africa of any size.

#### MUS MINUTOIDES, THE WHITE-BELLIED FIELD MOUSE.

*Mus minutoides*, A. SMITH, S. Afr. Quart. Journ., ii., p. 157 (1834); THOMAS, Proc. Zool. Soc., p. 266 (1882); *Id.*, *ibid.*, p. 13 (1888) [synonymy]; DE WINTON, Ann. Mag. N. H. (6), xx., p. 320 (1897).

*Mus minimus*, PETERS, M. B. Akad. Berlin, p. 274 (1852); *Id.*, Reise Mozamb. Säugeth., p. 153, pl. xxxiii., fig. 2, pl. xxxv., fig. 8 (1852); GRILL ET SUNDEVALL, Victorin Zool. Anteck. k. Vet. Akad. Handl., Stockholm, ii., p. 17 (1858).

*Description*.—Small and slender, general colour above fawn, rather darker on the middle of the back through the admixture of black hairs; fur coarse with pale slaty bases; below pure white without slaty bases, the line of demarcation of colour being strictly defined; ears moderate rounded and almost naked, a little darker along their margins; hands and feet scantily covered with white hairs, the claws rather large and not concealed by the hairs; pads normal in number and rounded, the skin between on both palms and soles being covered with numerous little rounded swellings; tail rather shorter than the head and body, pale, and covered with a fairly thick coating of white bristles not forming a bushy tip; mammae 8 to 10—2 to 3 pairs pectoral, 2 pairs inguinal.

Skull short and rather broad, anterior upper molar large, longer

than the two posterior ones taken together, the anterior portion elongated and rather pointed, often bearing an extra heel in front not found in other South African species. It is chiefly on this that the genus *Leggada* is founded, but the character is not sufficiently distinct or constant to afford grounds for generic distinction.

*Dimensions* (from a specimen in alcohol).—Head and body 2·40 (in skin 2·90); tail 1·90; hind foot ·50; from ear-opening to nose-tip ·70; skull length ·77, breadth ·40; upper molars ·15.

*Distribution*.—The type of this species was obtained near Cape Town by Sir A. Smith; the South African Museum possesses examples from various parts of the Cape Division, from Clanwilliam, Natal, and Delagoa Bay, and it is recorded from Knysna and Damaraland; it is, therefore, probably widespread throughout South Africa; outside these limits it extends through Mozambique and Nyassaland as far north as Wadelai and Uganda.

The following species are not represented in the collections of the South African Museum, and cannot at present be satisfactorily identified:—

#### MUS LEHOCHLA.

*Mus lehochla*, A. SMITH, App. Report Exped. Explor. S. Africa, p. 43 (1836); *Id.*, Illustr. Zool. S. Afr. Mam., pl. xlvii., fig. 1 (1849).

*Description*.—General colour above dark brown mixed with rufous, below white with a rufous tinge; eyebrow white; nose-tip (according to Smith's plate) white; tail a little longer than the head and body, brown and sparsely haired.

*Dimensions*.—Head and body 4·75; tail 5·0; hind foot ·82.

*Distribution*.—The type was obtained from Lataku near Kuruman in Bechuanaland, and was found in brushwood; it is perhaps a multimammate species allied to *Mus coucha*, but with a longer tail.

#### MUS NAMAQUENSIS.

*Gerbillus namaquensis*, A. SMITH, S. Afr. Quart. Journ., ii., p. 160 (1834).

*Mus namaquensis*, DE WINTON, Proc. Zool. Soc., p. 802 (1896).

*Description*.—General colour above fawn, pencilled with black especially posteriorly, sides lighter; below bluish white; slaty bases above and to the sides, but not to the belly hairs; ears very long and broad with short white hairs inside, extremities covered with

white hairs concealing the claws; tail a little shorter than the head and body with a short, scanty covering of bristles, black above white below (Smith).

This species seems allied to *M. paeduleus* and *M. auricomis*.

*Dimensions*.—Head and body 5·50; tail 4·75.

*Distribution*.—Namaqualand.

#### MUS CAFFER.

*Mus caffer*, A. SMITH, S. Afr. Quart. Journ., ii., p. 157 (1834).

*Description*.—General colour blue-grey or brown-grey, lighter on the sides, below greyish white; all the fur very long and soft; ears long and oval, the inner surface with a sprinkling of minute white hairs the outer with blackish hairs; feet greyish white; tail thinly covered with very short fine greyish hairs (Smith).

*Dimensions*.—Head and body 3·50; tail 3·0.

*Distribution*.—Kaffirland.

#### MUS MUSCARDINUS.

*Mus muscardinus*, WAGNER, Schreb. Säugeth. Suppl., iii., p. 430 (1843).

*Description*.—Rusty yellow above, white below, ears naked; feet white, tail shorter than the head and body, clothed with dark bristles above and white ones below.

*Dimensions*.—Head and body 5·10; tail 3·20; hind foot ·75.

*Distribution*.—Kaffraria, collected by Krebs.

#### GEN. SACOSTOMUS.

*Saccostomus*, PETERS, M. B. Akad. Berlin, p. 258 (1846).  
Type *S. campestris*.

*Description*.—Robust, mouse-like animals with internal cheek pouches, short tails and limbs; skull with the infraorbital opening not much narrowed below but more or less triangular; incisors small not grooved; molars like those of *Mus* but with the tubercles soon lost, so that in most specimens the teeth consist of transverse ridges of enamel with depressions between.

This genus is allied to *Mus*, but differs in its shorter tail and in



being provided with cheek pouches, in this resembling *Cricetus*, containing the Hamsters of the northern part of the Old World.

The genus is practically confined to South Africa, as the only other species described, besides those mentioned below, is *S. elegans* from the Nyika plateau in North Nyassaland.

#### SACCOSTOMUS CAMPESTRIS, THE POUCHED RAT.

*Saccostomus campestris*, PETERS, M. B. Akad. Berlin, p. 258 (1846); DE WINTON, Ann. Mag. N. H. (7), i., p. 6 (1898).

*Saccostomus lapidarius*, PETERS, Reise Mozamb. Säugeth., p. 167, pl. xxxiv., fig. 3, pl. xxxv., fig. 12, 1852; BOGAGE, Journ. Sci. Lisb. (2), v., p. 9 (1890) [habits]; LORENTZ, Ann. kk. Hofmus. Wien, ix. notiz. p. 65 (1894) [Zambesia].

*Description*.—Form somewhat stout, the head especially being thick and broad; general colour above and on the sides dark drab brown, the basal portion of the fur slaty, the tips chiefly pale brown but with many black ones intermingled, darkest along the middle of the back; below pure white with no slaty bases to the fur, the line of demarcation between the colours very distinct; whiskers fine and mostly white; ears of moderate size, rounded, with a few brown hairs only, about  $\cdot 60$  inches in length; limbs rather short; hands and feet white with pads and claws as in *Mus*, the proximal tarsal pad rounded; tail less than half the length of the head and body not scaly, with traces of the rings towards the base, covered with comparatively long rather outstanding hairs, dark above light below; 10 mammae—3 pairs pectoral, 2 pairs inguinal; in the specimen examined there was no paler spot behind the ears as described by Peters.

The middle upper molar does not bear the extra anterior outer cusp present in *S. mashonae*.

*Dimensions* (from a spirit-preserved specimen).—Head and body 5.0; tail 1.70; hind foot  $\cdot 65$ ; from ear-opening to nose-tip 1.30; skull length 1.30, breadth  $\cdot 70$ ; upper cheek teeth  $\cdot 20$ .

*Distribution*.—This species was originally described from the Zambesi valley by Peters; it is also recorded from Nyassaland, Angola, and Damaraland, while there are specimens in the South African Museum which seem to be referable to this species from the Albany, Griqualand West, and the Bedford districts of the Colony, and from Zululand; it is, therefore, fairly widely distributed over the south-eastern parts of Africa.

## SACCOSTOMUS MASHONAE, THE MASHONALAND POUCHED RAT.

*Saccostomus mashonae*, DE WINTON, Proc. Zool. Soc., pp. 804, 805 (1896).

*Description*.—General colour above iron-grey, sides somewhat paler, below slaty grey with grey drab tips to the fur; tail thinly covered with hair with longer white hairs standing out somewhat like those on the tail of a shrew.

Skull with the middle upper molar with a small though well-developed extra outer anterior cusp, not present in the other species.

This and the colour distinguish this species from *S. campestris*.

*Dimensions* (of the type).—Head and body 5·27; tail 1·37; hind foot ·87; skull length 1·39, breadth ·68; upper molars ·19.

*Distribution*.—The type of this species was obtained by Mr. J. ff. Darling at Mazoe in Mashonaland; there is no example in the South African Museum.

## SACCOSTOMUS ANDERSSONI, ANDERSSON'S POUCHED RAT.

*Saccostomus lapidarius*, apud THOMAS, Proc. Zool. Soc., p. 266, pl. xiv., fig. 2 (1882) (nec Peters).

*Saccostomus mashonae*, apud DE WINTON, Ann. Mag. N. H. (6), xx., p. 322 (1897) (nec de Winton, Proc. Zool. Soc. (1896), p. 804).

*Saccostomus anderssoni*, DE WINTON, Ann. Mag. N. H. (7), i., p. 6 (1898).

*Description*.—Resembling *S. campestris* in form and dimensions but differing in colour, being of a light, somewhat sandy tint, instead of drab brown.

*Distribution*.—Damaraland and Angola.

## SACCOSTOMUS FUSCUS, THE SMALL POUCHED RAT.

*Saccostomus fuscus*, PETERS, Reise Mozamb. Säugeth., p. 168, pl. xxxvi., fig. 4 [animal], pl. xxxv., fig. 13 [skull] (1852).

*Description*.—This species resembles the previous one, but is smaller, and has a more pointed nose and more thickly haired ears; below it is grey, and its claws are black.

*Dimensions*.—Head and body 3·25; tail 1·10; hind foot ·70; skull length 1·0.

*Distribution*.—This species was also discovered by Peters further

south than the former one, in the neighbourhood of Inhambane in Southern Mozambique. There is no specimen in the South African Museum.

#### GEN. ACOMYS.

*Acomys*, Is. GEOFFROY, Ann. Sci. Nat. (2), x., p. 126 (1838).  
Type *A. cahirinus*.

Small, mouse-like animals with the hinder part of the back covered with flattened, grooved, inflexible spines; 6 mammae—1 pair axillary, 2 pairs inguinal.

Skull with very small incisive foramina and with the coronoid process of the mandible but little developed; in other respects resembling *Mus*.

About thirteen species of spiny mice are described, the bulk of which are found in Africa and in the drier south-western parts of Asia; one species is known from Celebes.

#### ACOMYS SUBSPINOSUS, THE SPINY MOUSE.

*Mus subspinosus*, WATERHOUSE, Proc. Zool. Soc., p. 104 (1837).

*Acomys subspinosus*, THOMAS, Ann. Mag. N. H. (6), xviii., p. 269 (1896).

*Description*.—Back covered with flat, bristle-like spiny hairs; body above greyish brown getting paler on the sides, below pure white; a yellowish ring round the eyes; ears moderate; tail shorter than the head and body.

*Dimensions* (of the type).—Head and body 3·33; tail 2·93; from ear-opening to tip of nose ·88; hind foot ·70.

*Distribution*.—The type is described as having come from the "Cape of Good Hope"; no more exact locality is recorded; there is no specimen in the South African Museum.

#### ACOMYS SELOUSI, SELOUS' SPINY MOUSE.

*Acomys selousi*, DE WINTON, Proc. Zool. Soc., p. 807, pl. xl., fig. 2 [animal], (1896).

*Description*.—Smoky rufous-brown or coffee-coloured above, more smoky on the face and darker on the back; clear chestnut-brown on the cheeks, sides, and on a patch behind the ear; below pure white the two colours sharply distinguished; tail longer than the head and body, brown above paler below.

*Dimensions*.—Head and body 3·25 ; tail 3·63 ; hind foot ·70 ; skull length 1·0, breadth ·50 ; upper molars ·20.

*Distribution*.—The type was obtained by Mr. Selous on his farm near Bulawayo ; it has since been recorded from Nyassaland ; there are no specimens in the collections of the South African Museum.

#### GEN. DASYMYS.

*Dasymys*, PETERS, M. B. Akad. Berlin, p. 12 (1875). Type *D. incommutus*.

Mouse-like animals with moderate, somewhat hairy ears and rather coarse fur, tail moderate, scaly and sparsely haired ; skull somewhat intermediate between that of *Gerbillus* and *Mus* ; lower branch of the zygomatic process produced forwards in hooked shape ; incisors plain, front molars the longest, the posterior laminae of the first and anterior laminae of the second and third upper molars large and complicated.

#### DASYMYS INCOMMUTUS.

*Mus incommutus*, SUNDEVALL, Oefvers. Akad. Forh. Stockholm (1846), p. 120 (1847).

*Dasymys queinzii*, PETERS, M. B. Akad. Berlin, p. 12, pls. i., ii. (1875).

*Dasymys incommutus fuscus*, DE WINTON, Proc. Zool. Soc., p. 804 (1896).

*Description*.—General colour brown ; darkest on the middle of the back, paler on the sides, below grey, feet dark ; ears rounded, fairly clothed with hairs ; feet with the pads and claws as in *Mus*, tail shorter than the head and body, with scaly rings about 28 to the inch, bedecked with a few scanty short bristles.

*Geographical race*.—A dark variety is described by de Winton from Mashonaland resembling the type in size and general characters, but differing in colour, being a uniform sooty black with only slight yellow grizzling ; the upper incisors are deep orange-red, the lower brownish honey coloured.

*Dimensions* (of the type).—Head and body 6·25 ; tail 5·83 ; hind foot 1·37. Of the dark variety taken from the flesh : head and body 6·25 ; tail 5·75 ; hind foot 1·25 ; skull length 1·45, breadth ·79 ; upper molars 28.

*Distribution*.—The type of the species was obtained by the Swedish collector Wahlberg, near Durban, that of the dark variety at Mazoe, in Mashonaland, by Mr. ff. Darling; it is also recorded from Nyassaland. Mr. Marshall has recently presented an example to the South African Museum from Salisbury.

# GEN. ARVICANTHIS.

*Arvicanthis*, LESSON, N. Tabl. R. A. Mamm., p. 147, 1842. Type *A. niloticus*.

*Isonys*, SUNDEVALL, k. Vet. Akad. Handl. Stockholm (1842), p. 219 (1843). Type *A. niloticus*.

Rat-like animals with hairy ears, covered with a woolly under-fur, through which project the longer, coarser hairs; the first and fifth fingers and toes are very short, much more so than in the true rats. The plan of coloration is never plain, but consists of lines or spots on the back.

Skull and dentition as in *Mus*; mammae 8—2 pairs pectoral, 2 pairs inguinal.

This genus is hardly separated from *Mus* by any definite characters, and its recognition is more a matter of convenience than anything else; some half-dozen species are described from various parts of Africa, while one extends to the south-western part of Asia.

## ARVICANTHIS PUMILIO, THE STRIPED MOUSE.

*Mus pumilio*, SPARRMAN, k. Vet. Akad. Handl., p. 339, pl. vi. (1784); ID., Voyage to Cape, English trans., 8vo ed. ii., p. 375, pl. vii. (1785); BRANTS, Muizen, p. 103 (1827); SMUTS, Enum. Mam. Cap., p. 36 (1832); A. SMITH, S. Afr. Quart. Journ., ii., p. 153 (1834); ID., Illustr. Zool. S. Afr. Mam., pl. xlvi., fig. 1 (1849); SUNDEVALL, Oefvers. Akad. Forh. Stockholm 1846, p. 88 (1847); GRILL, Victorin Zool. Anteck. k. Vet. Akad. Handl. Stockholm, ii., p. 17 (1858); LAYARD, Cat. Mam. S. Afr. Mus., p. 50 (1862); THOMAS, Proc. Zool. Soc., p. 266 (1882).

*Mus lineatus*, F. CUVIER, Hist. Nat. Mam., livr. 61 (1829).

*Mus donovani*, LESSON, Man. Mam., p. 268 (1827).

*Mus vittatus*, WAGNER, Arch. Naturg., viii., p. 11 (1842).

*Mus septemvittatus*, SCHINZ, Synops. Mam., ii., p. 155 (1845).

*Mus striatus*, SUNDEVALL, Oefvers. Akad. Forh. Stockholm 1846, p. 88 (1847).

## A. PUMILIO, sub-sp. DILECTUS.

*Arvicanthis pumilio dilectus*, DE WINTON, Proc. Zool. Soc., p. 803 (1896).

## A. PUMILIO, sub-sp. BECHUANAE.

*Isomys p. bechuanae*, THOMAS, Proc. Zool. Soc., p. 551 (1892).

*Description*.—General colour greyish brown with a slight tinge of yellow, under-fur soft, fine, and dark slaty in colour, through which project considerably coarser hairs, white, black, and yellowish brown; along the back from the shoulders to the root of the tail run four black longitudinal stripes, separated by three narrower interspaces, of which the two outer are a little paler than the inner, of the same colour as the back; the black stripes vary considerably in distinctness, the two median ones usually originating in a single dark median stripe on the head from between the eyes and meeting at the root of the tail; below pure white, but the hair not very thick, so that the slaty black of the skin is visible, giving the belly a dirty white colour; head rat-like, a pale ring round the eye, the ears rounded, anteriorly and posteriorly with a fairly thick covering of rufous hairs with a black edging along the inner margin of the conch; extremities the same colour as the back, but paler; skin of the soles and palms dark, almost black, toes as in *Mus*, but the first and fifth proportionately shorter, pads as in *Mus*, but the second proximal one very small; claws black; tail scaled and ringed, about 39 to the inch, covered with bristles increasing in length towards the tip; the bristles are chiefly black along the dorsal line, and pale yellow below, but the skin of the tail is black throughout; mammae 8—2 pairs pectoral, 2 pairs abdominal.

*Geographical Races*.—The striped rat varies very considerably both in size and in colour.

In Bechuanaland there occurs a large, almost sandy race with the dorsal stripes very faint and with pale-coloured ears, described by Thomas.

In Mashonaland on the other hand a darker race than the normal is found with very dark, well-defined dorsal stripes and dusky belly washed with orange.

The collection of the South African Museum consists chiefly of spirit-preserved examples which are not of much service for the discrimination of slight colour variations, but some skins from Pondoland in the extreme east of the Colony appear to approach Mr. de Winton's *dilectus* race, and are certainly distinctly darker



and more richly coloured than what may be called the typical race from the neighbourhood of Cape Town.

*Dimensions*.—As has been remarked by former writers, there is a great variation in the dimensions of this species. In the case of spirit preserved specimens in the South African Museum, the length of the head and body varies from 3·60 to 4·90, and the tails from 3·70 to 5·90. The following are the dimensions of an individual measured in the flesh from the neighbourhood of Cape Town: Head and body 4·30; tail 4·10; hind foot 1·0; from ear to tip of nose ·88.

The dimensions of sub-species *bechuanæ* measured in the flesh are: Head and body 5·0; tail 4·62; hind foot 1·0. Of sub-species *dilectus*: Head and body 4·25; tail 3·25; hind foot ·75; the dimensions of a typical skull are—length 1·10, breadth ·60; upper tooth row ·20.

*Distribution*.—The type of this species was obtained by Sparrman on the banks of the Slangen River, close to Cape St. Francis, in what is now the Humansdorp Division of the Colony; the species is very common everywhere all over South Africa, and extends northwards to Great Namaqualand on the west, and through Nyassaland as far as Mianzini near Lake Naivasha in British East Africa, whence Thomas has described a third sub-species, *A. p. dimidiatus*, rather smaller and more brightly coloured than the typical one. As already stated, the two other sub-species, *A. p. bechuanæ* and *A. p. dilectus*, come from Bechuanaland and Mazoe in Mashonaland respectively.

#### ARVICANTHIS DORSALIS, THE SINGLE-STRIPED MOUSE.

*Mus dorsalis*, A. SMITH, Illustr. Zool. S. Afr. Mamm., pl. xlv., fig. 2 (1849); BOCAGE, Journ. Sci. Lisbon (2), v., p. 16 (1890).

*Arvicanthis dorsalis*, DE WINTON, Proc. Zool. Soc., p. 803 (1896).

*Description*.—General colour above reddish brown, the fur coarse like that of the other species; a single median black stripe running from the neck to the root of the tail; below rusty white; the skin white, not slaty as in the other species; ears rather broad, covered with coarse hairs, mingled reddish and black, the former prevailing; extremities of the same colour as the sides but white inside; the first and fifth digit of the forelimb very small and rudimentary, the latter provided with a small flat nail, so that the hand bears only three clawed digits; sole of the hind foot with three well-developed pads only, those at the base of the first and fifth toes and the one next to these proximally being very small or absent.

Tail longer than the head and body, but in other respects resem-

bling that of *A. pumilio*. Mammae 8—2 pairs pectoral, 2 pairs inguinal. Incisors broad and stout but smooth, not furrowed.

*Dimensions* (from a specimen preserved in spirit).—Head and body 4·70; tail 5·60; from ear-opening to tip of nose 1·40; hind foot 1·10. Of a specimen measured in the flesh by Mr. Darling: Head and body 5·12; tail 5·25; hind foot 1·12; skull length 1·20, breadth ·67; upper molars ·25.

*Distribution*.—Sir A. Smith, the describer of the species, states that it is common to the north of the Orange River, but rare to the south; it has also been obtained within our limits by Mr. Darling at Mazoe, in Mashonaland, and beyond in Angola, Mozambique, and Nyassaland.

#### GEN. GOLUNDA.

*Golunda*, GRAY, Charlesw. Mag., N. H., i., p. 586 (1837). Type *G. ellioti*.

*Pelomys*, PETERS, Reise Mozamb. Säugeth., p. 157 (1852). Type *G. fallax*.

Rat-like animals with short rounded heads and somewhat coarse bristly fur; the fifth finger of the forelimb is very short and rudimentary; the tail is long, scaly, and rat-like; skull with compressed palate; upper incisors grooved, molars low and broad with tubercles arranged as in *Mus*, when worn exhibiting a peculiar series of semi-circular flattened lobes arranged in a triple row in the upper, in a double row in the lower jaw.

The grooving of the incisors and the shortness of the fifth finger at once separate this genus from *Mus*, which it otherwise closely resembles.

Four species are recognised. One of these is found in India, two in West Africa, and the remaining one, described below, in South Africa.

#### GOLUNDA FALLAX, THE SWAMP RAT.

*Pelomys fallax*, PETERS, Reise Mozamb. Säugeth., p. 157, pl. xxxiii., fig. 3, pl. xxxv., fig. 9 (1852); BOCAGE, Journ. Sci. Lisb. (2), v., p. 47 (1890) [habits in Angola].

*Golunda fallax*, DE WINTON, Proc. Zool. Soc., p. 804 (1896).

*Description*.—General colour above speckled dark brown and yellowish, somewhat paler on the sides and grey below, fur harsh and bristly, a somewhat indistinct dark dorsal stripe along the back; tip of the nose rufous-brown, ears moderate, round, fairly covered

with rufous hairs; fifth finger very short, but clawed; tarsus with only five pads, the proximal one being absent, and the three next to it being very small; tail shorter than the body, dark above, paler below, covered with sparse bristles, the rings about 25 to an inch; mammae 8—2 pairs pectoral, 2 pairs inguinal.

Skull with the nasal region exceedingly short and broad; incisors with a strong longitudinal furrow rather towards the outer side of the tooth, molars much as in *Mus* but rather broader.

*Dimensions*.—Head and body 6·75; tail 5·25; hind foot 1·37 skull length 1·12. (Peters.)

*Distribution*.—This species was described by Peters from the Zambesi Valley in Mozambique. It has since been recorded from Nyassaland and Angola; within our region it was obtained by Mr. Darling at Mazoe, in Mashonaland. It is not represented in the collections of the South African Museum.

## SUB-FAMILY SIGMODONTINAE.

### GEN. MYSTROMYS.

*Mystromys*, WAGNER, Arch. Naturges, i., p. 132 (1841). Type *M. albicaudatus*.

Rat-like animals with soft, rather woolly fur, and large broad ears, with short tails and a somewhat hairy tarsus; skull with the antorbital foramen hardly at all narrowed below, and the perpendicular plate but little developed, not extending forwards beyond the upper root of the zygoma; incisors ungrooved, molars rooted, those of the upper jaw with the tubercles arranged in a double instead of a treble row as in the *Murinae*, those of the lower jaw as in the *Murinae* in a double row.

This genus appears to be confined to Central and South Africa, one species being described by Noak from the former region.

To the same sub-family belong the Hamsters of the Palæarctic region; a number of curious rat-like genera from Madagascar and from the New World, in neither of which two latter places are any true *Murinae* indigenous.

### MYSTROMYS ALBICAUDATUS, THE WHITE-TAILED RAT.

*Otomys albicaudatus*, A. SMITH, S. Afr. Quart. Journ., ii., p. 148 (1834); ID., Illustr. Zool. S. Afr. Mam., pl. xxxiii. (1849).

*Mystromys albipes*, WAGNER, Arch. Naturg., i., p. 132 (1841); ID. Schreb. Säugeth. Suppl., iii., p. 500, pl. clxxvi. a (1843).

*Malacothrix albicaudatus*, WAGNER, Schreb. Säugeth. Suppl., ii. p. 498 (1843).

*Mystromys albicaudatus*, DE WINTON, Ann. Mag. N. H. (7), i., p. 7 (1898).

*Description*.—General colour dark brown above, somewhat paler below, the fur being long, soft, and somewhat woolly, dark slate for the greater part of its length with brown tips; space round the nose and chin pure white; ears very large, broad, and patulous about  $\cdot 7$  by  $\cdot 6$  in., the inner half of the conch nearly white, the outer half black, covered anteriorly and posteriorly with a few silvery and black hairs; limbs slender, hands and feet covered with white hairs lengthened so as to almost conceal the claws, pads normal in number but the two proximal ones of the sole very small and rounded, the naked portion of the sole very narrow, much encroached on by the long white hairs on either side, so that the whole tarsus has a very hairy appearance; tail short, less than half the length of the head and body, almost white, obscurely ringed, but these are almost hidden by the dense covering of short hairs above, with a few black hairs intermixed, below pure white.

Incisors smooth and very pale yellow.

The above description is drawn up from a specimen in the South African Museum which has been compared with the type in the British Museum. It may be noticed that in Smith's original description the incisors are described as smooth, in the subsequently published 'Illustrations' as grooved.

*Dimensions* (from the example in alcohol in the South African Museum).—Head and body  $3\cdot 85$ ; tail  $1\cdot 68$ ; hind foot  $\cdot 95$ ; from ear-opening to nose-tip  $1\cdot 20$ ; skull length  $1\cdot 22$ , breadth  $\cdot 65$ ; upper tooth row  $\cdot 25$ .

*Distribution*.—Sir A. Smith met with this species in the neighbourhood of Grahamstown and to the north of the Orange River; the single example in the Museum is also from the neighbourhood of Grahamstown. There is an example in the British Museum from the Transvaal.

#### MYSTROMYS LANUGINOSUS, THE LARGER WHITE-TAILED RAT.

*Euryotis lanuginosa*, LICHTENSTEIN, Verzeichn. Säugeth. u. Vögel. Kaffirland, Berlin, p. 10 (1842).

*Description*.—General colour above light brown, below white, the hair thick, soft and rather woolly, dark slate for the greater part of its length, the tips mingled brown and white, the former predomi-

nating along the middle of the back, the latter on the sides; tip of the snout somewhat pale, not white, ears very large, about .9 in. by .75, darker towards the margin, covered with thin greyish hairs; limbs short and slender, hands and feet white above, the claws almost concealed by the long white hairs, pads as in the other species; tarsus with a very narrow naked line almost concealed by the long white hairs; tail short, obscurely ringed, covered with a thick coating of hairs, white above and below.

*Dimensions* (from an old stuffed specimen).—Head and body 7.0; tail broken about 2.0; hind foot 1.0; from ear-opening to nose-tip 1.40; skull length about 1.45, breadth .72; upper cheek teeth .25.

*Distribution*.—The single specimen from which the above account is taken was obtained some years ago on the Cape Flats, and is now in the South African Museum. Possibly it may turn out to be an undescribed species.

## FAMILY BATHYERGIDAE.

### GEN. BATHYERGUS.

*Bathyergus*, ILLIGER, Prodr. Syst. Mam., p. 86 (1811). Type *B. maritimus*.

Burrowing rodents with small eyes, no ear conch, and the toes of the fore feet with specially long claws, of which that of the second digit is considerably the longest; hind foot with the third toe the longest.

Skull massive with an almost straight upper profile and a small sub-circular antorbital foramen.

*Dentition*.—i. 1/1; c. 0/0; p.m. 1/1; m. 3/3 = 20; upper incisors large, broad, and grooved, lower incisors also large but smooth; molars simple with re-entering folds in youth only.

Only the single species below described is known.

### BATHYERGUS MARITIMUS, THE SAND MOLE.

*Mus maritimus*, GMELIN, Linn. Syst. Nat.; p. 140 (1788).

*Mus suillus*, SCHREBER, Säugeth., iv., p. 715, pl. cciv. B (1792).

*Georychus maritimus*, A. SMITH, Deser. Cat. S. Afr. Mus., p. 28 (1826).

*Bathyergus maritimus*, SMUTS, Enum. Mam. Cap., p. 48 (1832); A. SMITH, S. Afr. Quart. Journ., ii., p. 170 (1834); LAYARD, Cat. Mam. S. Afr. Mus., p. 55 (1862).

*Orycterus maritimus*, WATERHOUSE, Ann. Mag. N. H. (1) viii., p. 81, pl. ii., fig. 1 [skull], (1842).

*Description*.—General colour slaty grey with a distinct brown tinge on the back, fur soft, thick and rather woolly, slaty for the greater part of its length, the tips on the back being pale brown; head somewhat acutely pointed, a considerable flesh-coloured patch surrounding the nostrils and reaching the edge of the upper lip; the incisors so long that they are always visible, the lips not being large enough to cover them; eyes about as large as the head of a large pin, the eyeballs being about  $\cdot 10$  in. in diameter; external ears absent, a small round hole surrounded by a fleshy coloured bare margin marking the external opening of the meatus; limbs very short, the fore feet with five toes all with large strong claws much better developed than those of the hind feet, the second the longest, then the third, fourth, fifth, and first in order; hind foot with a broad naked sole, along the sides of which run fringes of white stiff bristle-like hairs; the five toes of the hind foot are all clawed, the middle one being the longest, the claws somewhat flattened and nail-like; tail very short, covered on the sides and below with stiff white bristles.

Incisors white, those of the upper jaw strongly grooved down the middle of the tooth; those of the lower very long, sometimes over three inches, of which half protrude beyond the socket; these teeth are separated by a slight interval; the molars somewhat oval in section, decreasing in size from in front backwards, surrounded by a ring of enamel with infoldings gradually disappearing with age.

White and piebald varieties of this animal are not uncommon.

*Dimensions* (from a skin).—Head and body 16·50; tail 1·25; hind foot 1·87; from ear-opening to nose-tip 4·50; skull length 2·70, breadth 1·90; upper molars  $\cdot 50$ .

*Distribution*.—This animal appears to be found only along the coast and never inland, it is abundant near Cape Town, and seems to extend northwards to Namaqualand, and eastwards as far as Knysna certainly, perhaps as far as Bathurst. All the specimens in the South African Museum are from the neighbourhood of Cape Town.

#### GEN. GEORYCHUS.

*Georychus*, ILLIGER, Prodr. Syst. Mam., p. 87 (1811). Type *G. capensis*.

Rodent moles closely resembling *Bathyergus* externally, but with



quite small claws to both feet, the second and third toes of both fore and hind feet are about equal, and the longest.

Skull with a somewhat rounded upper profile; teeth as in *Bathyergus*, but with the upper incisors quite smooth.

This is a purely African genus; in addition to those described below, there are some three or four species known from Angola, Central and East Africa.

GEORYCHUS CAPENSIS, THE BLES MOL.

*Mus capensis*, PALLAS, Glires, pp. 76, 172, pl. vii. (1779).

*Bathyergus capensis*, SMUTS, Enum. Mam. Cap., p. 49 (1832); A. SMITH, S. Afr. Quart. Journ., ii., p. 170 (1834); WATERHOUSE, Ann. Mag. N. H. (1), viii., p. 81, pl. ii., fig. 2 (1842).

*Georychus capensis*, A. SMITH, Descr. Cat. S. Afr. Mus., p. 26 (1826); GRILL, Victorin Zool. Anteck. k. Vet. Akad. Handl. Stockholm, ii., p. 19 (1858) [Cape Town and Knysna]; LAYARD, Cat. Mam. S. Afr. Mus., p. 55 (1862); GRAY, Proc. Zool. Soc., p. 123 1864; P. L. SCLATER, Proc. Zool. Soc., pp. 246, 449 (1889) [white var.]; THOMAS, Ann. Mag. N. H. (6), xvi., p. 238 (1895).

*Description*.—General colour above a rusty brown becoming paler on the sides, and slaty grey below; the fur soft and thick, and with slaty bases throughout, except on the spots; head becoming darker, almost black; round the nostrils and mouth, round the eyes, round the ear-openings and on the top of the head a set of pure white patches; head much truncated in front; eyes very small; external ears absent; limbs short, fore feet with five small claws, hind feet also with five claws, short and broad, the sole covered with wrinkles and creases, but with no definite pads; tail very short, thick, and rounded, covered with white stiff bristles; mammae 8 in number—2 pairs pectoral, 2 pairs inguinal.

Young of about five inches are a pure slaty grey above, not rusty brown. Skull with the nasals and premaxillae, extending back about the same distance, incisors white, quite smooth; upper molars increasing in size from before backwards, the premolars being the smallest.

*Dimensions* (from a stuffed specimen).—Head and body 8·5; tail ·80; hind foot 1·20; from ear-opening to nose-tip 1·5; skull length 2·10, breadth 1·60; upper molars ·33.

*Distribution*.—The western half of the Colony extending to Namaqualand and Kimberley in the north and to Knysna in the east.

## GEORYCHUS DAMARENSIS, THE DAMARALAND BLES MOL.

*Bathyergus damarensis*, OGILBY, Proc. Zool. Soc., p. 5 (1838).

*Georychus damarensis*, GRAY, Proc. Zool. Soc., p. 125 (1864); THOMAS, Ann. Mag. N. H. (6), xvi., p. 239 (1895).

*Description*.—Size about the same as the common Blesmol. General colour uniform reddish brown above and below with a large irregularly square white mark on the occiput and another on each side of the neck below the ears, meeting below on the throat, which is therefore a dirty white; feet reddish brown; tail short, covered with stiff reddish brown bristles. (Ogilby.)

*Dimensions*.—Head and body 8·25; tail ·25.

*Distribution*.—The type of this species, now in the British Museum, was obtained many years ago by Capt. Alexander in Damaraland; it also occurs in Angola. It is not represented in the collections of the South African Museum.

## GEORYCHUS DARLINGI, DARLING'S BLES MOL.

*Georychus darlingi*, THOMAS, Ann. Mag. N. H. (6), xvi., p. 239 (1895); DE WINTON, Proc. Zool. Soc., p. 805, pl. xl., fig. 1 (1896).

*Description*.—Size small; fur close, soft, and velvety, general colour uniform drab, the bases of the fur slaty grey, below slightly paler; a large prominent triangularly shaped spot on the crown of the head; feet and tail as in *G. hottentotus*.

Skull broad and heavy, nasals short and evenly expanded, premaxillae surpassing them posteriorly and forming a suture behind them; antorbital foramen higher than broad, with a thick outer wall.

*Dimensions* (from a male measured in the flesh).—Head and body 5·0; tail ·47; hind foot ·86; skull length 1·12, breadth ·88; upper molars ·22.

*Distribution*.—The type now in the British Museum was obtained by Mr. G. A. K. Marshall, near Salisbury, and other specimens collected by Mr. Darling were received from Mazoe also in Mashonaland, at the same time; not represented in the South African Museum.

## GEORYCHUS HOTTENTOTUS, THE MOLE RAT.

*Bathyergus hottentotus*, LESSON, Voy. Coq. Zool., i., p. 166, pl. ii. (1825).

*Bathyergus caecutiens*, BRANTS, Muizen, p. 37 (1827); SMUTS,

Enum. Mam. Cap., p. 49 (1832); A. SMITH, S. Afr. Quart. Journ., ii., p. 171 (1834).

*Bathyergus ludorigii*, A. SMITH, Zool. Journ., iv., p. 439 (1829).

*Georychus holosericeus*, WAGNER, Schreber Säugeth. Suppl., iii., p. 373 (1843).

*Georychus carcutiens*, GRAY, Proc. Zool. Soc., p. 125 (1864); THOMAS, Ann. Mag. N. H. (6), xvi., p. 238 (1895).

*Georychus hottentotus*, GRILL, k. Vet. Akad. Handl. Stockholm, ii., p. 19 (1858) [Knysna]; NOAK, Zool. Jahrb., iv., p. 144, pl. iii., figs. 21–25 (1895) [Kalahari].

*Description*.—Much smaller than *G. capensis*; general colour dark slaty with a tinge of dark brown above owing to the brown tipping of the slaty fur, below the tipping is dirty white, giving a paler general aspect to the fur; no sign of white anywhere on the head, which is the same colour as the body; not entirely blind as described by Brants, but with very small eyeballs about .08 in. in diameter and a distinct slit measuring about the same length; limbs and tail as in the other species, but with the sole of the foot narrower and more slender.

Skull with the premaxillae extending further back than the nasals and forming a suture in the middle line behind; the lachrymal bone forms on either side a slight overhanging projection, rendering the skull at this point much wider than it is just behind; antorbital opening elongated and upright. The upper molars are more rounded than in *G. capensis*, and decrease in size from in front backwards, the premolar being the largest.

*Dimensions* (of a male in the flesh).—Head and body 5.62; tail .50; hind foot .92; skull length 1.35; breadth .97; upper molars .25.

*Distribution*.—This is the common Mole Rat of the eastern province of the Colony and Natal, though extending as far as Stellenbosch in the west, whence the South African Museum possesses examples; other localities are Uitenhage (Smith), Knysna (Victorin), Kalahari (Noak), Johannesburg, Grahamstown, Howick, and Durban in Natal (South African Museum).

#### GEORYCHUS NIMRODI, SELOUS'S MOLE RAT.

*Georychus nimrodi*, DE WINTON, Proc. Zool. Soc., p. 808 (1896).

*Description*.—About the same size as *G. hottentotus*; general colour dark drab with no white spot on the head; skull with the premaxillae not extending posteriorly beyond the nasals, so that the suture between these and the frontals is a simple bowed line; antorbital foramina small, with the outer wall thickened.

*Dimensions* (of the type, a male in the flesh).—Head and body 5·75; hind foot ·96; skull length 1·22, breadth 1·06.

*Distribution*.—The type together with several other examples, were all obtained by Mr. Selous, at Essex Vale, a farm near Bulawayo, and are now in the British Museum.

## FAMILY PEDETIDÆ.

### GEN. PEDETES.

*Pedetes*, ILLIGER, Prodr. Syst. Mamm., p. 81 (1811). Type *P. caffer*.

*Helanys*, F. CUVIER, Dict. Sci. Nat., xx., p. 344 (1817). Type *P. caffer*.

Form kangaroo-like, with short fore limbs, and well-developed hind limbs, the metatarsus being especially elongated and the metatarsal bones separate from one another; there are four toes armed with hoof-like nails.

Skull short and broad with very wide and expanded nasals, ant-orbital opening very large and oval; malar bone ascending from the zygomatic arch in a horizontal plate to meet the lachrymal bone; cervical vertebrae free.

*Dentition*.—i. 1/1; c. 0/0; p.m. 1/1; m. 3/3=20; molars rootless, with a single deep enamel fold externally in the upper jaw, internally in the lower jaw.

This genus, the only one of the family, and containing the single species below described, is a rather anomalous one, and has no near allies, so that its position among the other rodent families has varied considerably. Mr. Alston, in his classical paper on the arrangement of Rodents (Proc. Zool. Soc., 1876, p. 61), placed it in a special sub-family of *Dipodidae*, or Jerboa rats, among the *Myomorpha*; several authors have recognised the fact that the resemblances between the Jerboas and *Pedetes* are artificial and adaptive rather than natural, and Dr. Winge, of Copenhagen, in a general revision of the Rodents,\* placed the *Pedetidae* between the *Sciuridae* and the *Anomoluridae*; Mr. O. Thomas,† however, in his recently published list has transferred the family to the *Hystricomorpha*, and placed them at the commencement of the series; on the whole, most of

\* Jordfændene og nulevende Gnavene fra Lagoa Santa E. Mus Lundii, iii. (1887).

† Proc. Zool. Soc. (1896), p. 1012.

the characters of the skull and teeth bear out the contention of Mr. Thomas.

PEDETES CAFFER, THE SPRING-HAAS.

*Mus caffer*, PALLAS, Glires, p. 87 (1778).

*Yerbua capeusis*, FORSTER, k. Vet. Akad. Handl. Stockholm, p. 108, pl. iii. (1778).

*Helamys capensis*, F. CUVIER, Hist. Nat. Mam., livr. 59 (1829); LAYARD, Cat. Mamm. S. Afr. Mus., p. 55 (1862).

*Pedetes caffer*, A. SMITH, Descr. Cat. S. Afr. Mus., p. 26 (1826); SMUTS, Enum. Mam. Cap., p. 47 (1832).

*Pedetes typicus*, A. SMITH, S. Afr. Quart. Journ., ii., p. 169 (1834).

*Description*.—General colour tawny brown, becoming paler on the sides and almost pure white below, including a vertical stripe in front of the thighs; fur long, straight, dark brown, with a slaty tinge basally, sandy brown terminally; rhinarium not connected with the upper lip by a naked line; snout very obtuse, eye large, ears long and pointed, measuring  $2\frac{1}{2}$  to 3 in., thickly clothed with hairs basally, nearly naked terminally, bearing at the base of the inner margin a little fleshy projecting lobe resembling a bat's tragus; fore limbs short, with five toes, all provided with long, curved, and pointed claws, palm of the hand with a large, rounded, naked pad at the root of the thumb, and another smaller oval one with a fringe of hairs around it at the root of the fifth digit; hind limbs much elongated, the tarsus being as long as the foot from the knee to the ankle; only four toes, the third the largest, the fifth the smallest, and the first absent, all armed with solid hoof-like nails; sole of the foot hairy to the claws; tail about as long as the head and body, covered with long hairs, sandy brown above, pale below, the terminal third black; mammae 4 in number, pectoral in position.

*Dimensions* (from a stuffed specimen).—Head and body 23·50; tail without terminal hairs 20·50; with 21·50; hind foot 6·50; from ear-opening to tip of nose 4·0; skull length from condyle to pre-maxillae 2·95, between perpendiculars 3·8, breadth 2·35; upper molars ·78.

*Distribution*.—Found throughout the drier and higher parts of South Africa extending northwards to Angola and Unyamwezi in German East Africa, but not apparently occurring in Nyassaland, Mozambique, or Natal; the South African Museum possesses

examples from the Port Elizabeth, Albany, Graaf Reinet, and Middelburg Divisions of the Colony, it is also found throughout the Orange Free State, Griqualand West, Bechuanaland, the Transvaal, Rhodesia, and German South-West Africa.

## FAMILY OCTODONTIDAE.

### GEN. PETROMYS.

*Petromys*, A. SMITH, S. Afr. Quart. Journ., i., No. 5, p. 11 (1831).  
Type *P. typicus*.

Compact, rounded animals with moderate rounded ears, with tails only a little shorter than the body covered with stiff hairs, which become longer towards the tip; five toes to both fore and hind limbs, the pollex, however, being short and rudimentary.

Skull very broad posteriorly, with very large antorbital openings, at the base of which is a groove for the passage of the nerve.

*Dentition*.—i. 1/1; c. 0/0; p.m. 1/1; m. 3/3=20; upper incisors smooth, small, and compressed; molars rooted somewhat quadrate with a single fold internal in the upper and external in the lower jaw, and with indications of smaller opposite folds external in the upper, internal in the lower jaw.

Only one species of this genus, that below described, is known.

### PETROMYS TYPICUS, THE ROCK RAT, OR NOKI.

*Petromys typicus*, A. SMITH, S. Afr. Quart. Journ., i., No. 5, p. 11 (1831); *Id.*, *ibid.*, ii., p. 146 (1834); *Id.*, *Illustr. Zool. S. Afr. Mam.*, plates xx., xxi. (skull and anat.), (1849); WATERHOUSE, *Nat. Hist. Mam.*, ii., p. 308, pl. xvi., fig. 8, pl. xvii., fig. 1 (1848).

*Description*.—General shape rat-like; colour dull brownish grey, pencilled tawny and black, hinder part of the back and posterior extremities dull chestnut, all the hairs bluish grey at the base; below dull white tinged with tawny; apex of the muzzle and orbit bright chestnut, whiskers long, rigid, and black, snout projecting and truncated; ears rather small, wider than high, blackish, only moderately clothed with hair; fore limbs with four clawed toes, the first being represented by mere tubercle, palms with five rather swollen pads; claws back; hind limbs somewhat thickened, hairy above, naked below, with six pads, the three at the base of the toes large and oval, the two next small and rounded, the proximal one



much elongated but not well developed, all the toes clawed, the first short and not reaching the base of the second.

Tail a little shorter than the head and body, cylindrical, covered with scales, which, however, are concealed by the long black hairs, these are about .25 in. long towards the base, but gradually increase to about .75 in. at the tip, the extreme base of the tail is the same colour as the body, the rest of it is black.

Incisors yellowish.

*Dimensions* (from a specimen in alcohol).—Head and body 5.75; tail 5.30; hind foot 1.25; from ear-opening to tip of nose 1.50; length of a skin according to Smith 7.25; skull length 1.63, breadth .98; upper molars .38.

*Distribution*.—The Rock Rat has been found only in Namaqualand; Sir A. Smith obtained his specimens in the mountains towards the mouth of the Orange River. The South African Museum is indebted to Dr. Howard for examples of this species, obtained at Klipfontein about fifty miles inland from Port Nolloth.

#### GEN. THRYONOMYS.

*Aulacodus*, TEMMINCK, Monogr. Mam., i., p. 245 (1827) (nec Eschschricht). Type *T. swinderenianus*.

*Thryonomys*, FITZINGER, S. B. Akad. Wien, lvi., p. 141 (1867). Type *T. semipalmatus*.

Stout, rat-like animals, with blunt muzzles, harsh fur, and short tails sparsely covered with stiff bristles; the fore feet with a rudimentary pollex and a small fifth toe, the hind foot with only four digits, the outer (fifth) being very short.

Skull with inflated facial and small cranial divisions, the occipital and lamboidal crests are very well developed, the antorbital opening is large and has a special basal groove for the reception of the nerve.

*Dentition*.—i. 1/1; c. 0/0; p.m. 1/1; m. 3/3=20; incisors very broad, the upper ones with three strong longitudinal grooves; the lower ones smooth; molars rooted, with, in the upper jaw two external and one internal enamel folds; in the lower jaw one external and two internal folds.

The use of the old and more familiar name for this genus, *Aulacodus*, has recently been shown by Thomas to be inadmissible, as it was previously used by Eschschricht for a genus of *Coleoptera*.

Four species from other parts of Africa are recognised in addition to the one below described.

THRYONOMYS SWINDERENIANUS, THE CANE RAT.

*Aulacodus swinderianus*, TEMMINCK, Monogr. Mam., i., pp. 245, 248, pl. xxv. [juv.] (1827); WATERHOUSE, Nat. Hist. Mam., ii., p. 356, pl. xvi., fig. 2 (1848); LAYARD, Cat. Mam. S. Afr. Mus., p. 50 (1862).

*Aulacodus swinderenianus*, THOMAS, Ann. Mag. N. H. (6), xiii., p. 202 (1894).

*Description*.—General colour speckled yellow and brown, below paler, body covered everywhere with coarse bristles, no under-fur, the bristles are pale brown for the greater part of their length, with subterminal black and terminal yellow portions, they are flattened and grooved on the upper surface; chin and upper lip dirty white; ears short, broad and rounded, almost concealed among the bristles, covered with a few dark hairs; limbs rather short, with four clawed toes to each, those of the fore limb being the shorter, pollex very small with a flat nail, hallux absent; tail less than half the length of the head and body, somewhat rat-like, covered with short stiff hairs, dark above, light below, the scaly skin being hardly hidden; mammae 6 in number, pectoral in position.

*Dimensions* (from a stuffed specimen).—Head and body 19·0; tail 7·0, hind foot 2·80; from ear-opening to nose-tip 3·55; skull length 3·75, breadth 2·62; upper molars ·75; weight of a male from 9 to 10 lbs.

*Distribution*.—The Cane Rat was originally described by Temminck from a young specimen of which the history was unknown; subsequently it was obtained from Sierra Leone and Natal, and it is now known as well from French Congo, Angola, German East Africa, Nyassaland, and Mozambique. Within our limits it is found only in the eastern Transvaal, Zululand, Natal, and the eastern portion of the Colony as far as Grahamstown.

## FAMILY HYSTRICIDAE.

### GEN. HYSTRIX.

*Hystrix*, LINNAEUS, Syst. Nat., 12th ed., i., p. 75 (1766).

Porcupines with short tails, smooth soles, and furrowed upper lips; the skull is ovate and greatly inflated with air sinus, the nasal cavity being specially large; the clavicles are imperfect.

*Dentition*.—i. 1/1; c. 0/0; p.m. 1/1; m. 3/3=20; molars semi-rooted, those of the upper jaw with one internal and three or four external enamel folds, this arrangement being reversed in the lower jaw; the folds soon become with wear simple loops of enamel inside the margin of the tooth.

Only one member of this genus occurs within our limits, the other species are spread over Southern Europe, Asia, and Northern Africa.

#### HYSTRIX AFRICAE-AUSTRALIS, THE SOUTH AFRICAN PORCUPINE.

*Hystrix cristata*, apud SMUTS, Enum. Mam. Cap., p. 50 (1832); A. SMITH, S. Afr. Quart. Journ., ii., p. 171 (1834); LAYARD, Cat. Mam. S. Afr. Mus., p. 55 (1862) (nec Linnaeus).

*Hystrix africae-australis*, PETERS, Reise Mozamb. Säugeth., p. 170, pl. xxxii., figs. 6, 7 [skull] (1852).

*Hystrix capensis*, GRILL, k. Vet. Akad. Handl. Stockholm, ii., p. 19 (1858).

*Description*.—General colour dark brown, almost black, the fore part of the body and limbs covered with long coarse bristles, which are not stiff and sharp; along the nape of the neck and the middle of the front part of the back the bristles are very long, up to 16 inches, and stand up at the will of the animal and form a crest; towards the hinder part of the back and the haunches the bristles become stronger, stouter, and sharp-pointed, forming the true quills, these are banded brown and white, the brown bands being the broader and the tips white; all the quills are longitudinally striated.

Head much rounded, the rhinarium somewhat hairy and connected with the upper lip by a bare line, eyes small and black, ears short, broad, and rounded, thick with a few fine hairs; sometimes a white transverse mark on the chest; feet covered with bristles nearly concealing the toes and claws, which are four in number on the fore feet (the pollex being rudimentary) and five on the hind; tail short, entirely surrounded and concealed by the spines, the point with a tuft of hollow membranous cylinders, which in the young are pointed and spiny, but broken off in the older animals.

The differences between this species and that of Southern Europe and Northern Africa (*H. cristata*) are chiefly cranial, and were first noticed by Peters.

In the South African species the nasal bones reach backwards as far as the anterior border of the orbit, while in *H. cristata* they

extend much further, as far as the posterior root of the zygoma. In consequence of this the frontal bones in *H. africæ-australis* are much longer, being more than half the length of the nasals and twice as long as their distance from the occipital crest; in *H. cristata*, on the other hand, they are less than half the length of the nasals and just about as long as their distance from the occipital crests.

*Dimensions* (from a stuffed specimen).—Head and body 26·0; tail about 5·0; hind foot 4·50; from ear-opening to nose-tip 6·50; skull length 6·0, breadth 3·40; upper molars 1·5.

*Distribution*.—This porcupine is found all over South Africa, extending northwards as far as French Congo on the west and German East Africa on the east; within our limits it appears to be very widely spread, being recorded from nearly all the districts of the Colony, from German South-West Africa, Rhodesia, the Transvaal, Orange Free State, and Natal. It is not uncommon on the slopes of Table Mountain.

## FAMILY LEPORIDÆ.

### GEN. LEPUS.

*Lepus*, LINNÆUS, Syst. Nat., 12th ed., i., p. 77 (1766).

Rodents with long ears and hind legs and short, bushy, recurved tails; limbs with five toes to the fore and four to the hind feet, soles very thickly haired.

Skull with the bony palate reduced to a mere bridge between the molars, with no true alisphenoid canal, and with a very peculiarly shaped postorbital process; this where it springs from the frontals is quite narrow but afterwards expands to form a flattened bar margining the upper rim of the orbit.

*Dentition*.—i. 2/1 (at birth 3/1); c. 0/0; p.m. 3/2; m. 3/3 = 28; the outer upper incisors are soon lost, the next pair are very small and placed directly behind the large middle pair which are longitudinally grooved; grinding teeth rootless with transverse enamel folds dividing them into lobes.

The genus contains the hares and rabbits, of which there are a large number of species distributed all over the world, with the exception of the Australian region and Madagascar.

### LEPUS CAPENSIS, THE CAPE HARE.

*Lepus capensis*, LINNÆUS, Syst. Nat., 12th ed., i., p. 76 (1766); SMUTS, Enum. Mam. Cap., p. 51 (1832); A. SMITH, S. Afr. Quart.

Journ., ii., p. 172 (1834); WATERHOUSE, Nat. Hist. Mam., ii., p. 95 (1848); GRILL, k. Vet. Akad. Handl. Stockholm, ii., p. 19 (1858); LAYARD, Cat. Mam. S. Afr. Mus., p. 56 (1862); NOAK, Zool. Jahrb. iv., p. 159 (1889) [Kalahari].

*Lepus arenarius*, IS. GEOFFROY, Dict. Class. d'Hist. Nat., ix., p. 383 (1825) [Port Natal].

*Lepus ochropus*, WAGNER, Schreb. Säugeth. Suppl., iv., p. 96 (1844).

*Description*.—General colour speckled black and yellowish brown, the hairs somewhat coarser than that of the other species, woolly and pale slate colour at the base, the tips yellowish brown with a sub-terminal band of black; sides paler somewhat rufous, below white tinged with rufous; chin pale yellowish, chest pale brownish, outside of the limbs with a rufous tinge, round the eye a pale almost white ring; ears moderate, about  $4\frac{1}{2}$  in. in length from the point of coalescence of the margins to the tip, almost naked anteriorly, posteriorly with the inner half thickly clothed with short almost black hairs, the tips and upper margins quite black; nape and occiput grey not rufous; feet clothed with comparatively short hairs so that the claws are hardly hidden; tail rather long, jet-black above pure white below.

*Dimensions* (from a stuffed specimen).—Head and body 23·0; tail 4·0; hind foot 4·50; from ear to tip of nose 4·5; skull length 3·42, breadth 1·55; upper molars ·54.

*Distribution*.—The Cape Hare is found almost everywhere throughout the Colony, and extends northwards through Angola to French Congo on the West Coast, and through Natal, Mozambique, and German East Africa to Kilimanjaro on the East Coast; it has been noticed by Kirby in the Eastern Transvaal, but hitherto its occurrence in Rhodesia and Nyassaland has not been authenticated. It is common in the immediate neighbourhood of Cape Town, whence come the examples in the South African Museum.

#### LEPUS SAXATILIS, THE ROCK HARE.

*Lepus saxatilis*, F. CUVIER, Dict. Sci. Nat., xxvi., p. 309 (1823); A. SMITH, S. Afr. Quart. Journ., ii., p. 173 (1834); SMUTS, Enum. Mam. Cap., p. 52 (1832); WATERHOUSE, Nat. Hist. Mam., ii., p. 92, pl. i., fig. 1 (1848); LAYARD, Cat. Mam. S. Afr. Mus., p. 56 (1862).

*Lepus rufinucha*, A. SMITH, Zool. Journ., iv., p. 440 (1829).

*Lepus fumigatus*, WAGNER, Schreb. Säugeth. Suppl., iv., p. 98 (1844).

*Description*.—Considerably larger than the other two species; general colour speckled black and yellowish brown, but with no trace of the rufous; below, including the chin, white with a pale yellowish tinge, chest like the back, no black mark on the cheek, a white spot often present on the forehead; ears very long from the confluence of the margins about  $5\frac{1}{4}$  in., from the extreme base about  $6\frac{1}{2}$  in., nearly naked anteriorly; the inner half of the posterior surface thickly covered with short hair and along the margin of the tip a fringe of black; a rufous patch on the nape and occiput as in *L. crassicaudatus*; limbs much longer than those of the other species; claws concealed by the long hairs; tail long like that of *L. capensis*, white with a black streak above.

*Dimensions* (from a stuffed specimen).—Head and body 26·0; tail about 4·0; hind foot 5·75; from ear to tip of nose 6·0; skull length 4·15, breadth 1·82; upper molars ·66.

*Distribution*.—This Hare appears to be confined to the higher hills throughout South Africa as far north as Ovampoland and Rhodesia; it does not seem to be recorded from the countries beyond our limits, though it is noted by Peters from the neighbourhood of Tette on the Zambesi.

#### LEPUS CRASSICAUDATUS, THE RED HARE.

*Lepus crassicaudatus*, IS. GEOFFROY, Mag. Zool., pl. xix. (1832); WATERHOUSE, Nat. Hist. Mam., ii., p. 99 (1848); LAYARD, Cat. Mam. S. Afr., p. 57 (1862).

*Lepus rupestris*, A. SMITH, S. Afr. Quart. Journ., ii., p. 174 (1834).

*Lepus melanurus*, RUEPPELL, Mus. Senckenbergianum, iii., p. 137 (1842).

*Description*.—General colour speckled black and yellowish brown much as in *L. capensis*, but perhaps a little lighter, becoming rufous-white below; fur softer than in *L. capensis*; chin white, separated on either side from the grey of the cheeks by a black line running back from the angle of the mouth to below the ear; a whitish ring round the eye; ears moderate rounded at the extremities, about  $4\frac{1}{2}$  in. in length, nearly naked anteriorly, posteriorly a band along the inner margin covered with very short speckly black and yellow hairs; a pure rufous patch on the occiput and nape of the neck, the rufous extending up the base of the ears; legs and feet short and rufous-brown; tail thick and bushy, pale brown above and below, with no white or black as in the other species.



*Dimensions*.—Head and body 20·0; tail 3·50; hind foot 5·0; from ear-opening to tip of nose 4·5.

*Distribution*.—This Hare is also found only in the hills at considerable elevations; it appears to be fairly well distributed all over the Colony, Natal, the Orange Free State and Southern Transvaal; it has recently been obtained on the Nyika plateau at an elevation of 7,000 ft. in Nyassaland. An example in the South African Museum is from Beaufort West.

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#### ADDENDA.

While the above was passing through the press the South African Museum received from Mr. W. Francis, of Inhambane, in Portuguese South-East Africa, examples of the large Gambian Pouched Rat (*Cricetomys gambianus*), which must accordingly be added to the above list. Peters also notes its occurrence near Inhambane. Its position should be just after *Mus* on page 214.

On page 203 the dimensions of *Malacothrix pentonyx* were accidentally omitted; they are as follows, taken from a dismounted skin, the type of the species: head and body 2·75; tail 2·10; hind foot ·65; ear to nose-tip 1·1; skull length ·91, breadth ·5, upper cheek teeth ·19.